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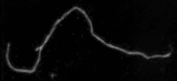
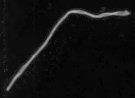




AMERICAN ANTIQUITY

VOL. X JULY, 1944 No. 1

ARCHAEOLOGICAL REMAINS OF THE OSAGE[1]

BREWTON BERRY, CARL CHAPMAN, and JOHN MACK

SINCE 1939 the writers have attempted, from time to time, to locate village sites of the Osage Indians, in the hope of determining the type of culture that was associated with that important tribe. The Oneota aspect of the Upper phase of the Mississippi pattern has been assigned to the Chiwere branch of the Sioux with considerable assurance,[2] but identification of the culture of the Dhegiha branch has remained largely in the sphere of debate and speculation. It is not, however, entirely a matter of speculation, for some evidence has begun to come in.[3] The problem is by no means settled, but in view of the times, it seemed wise to present such data as we have been able to gather.

The Osage have been known to the whites since the time of Marquette, but the first visit of which we have record was that of Du Tisné, in 1719. He reported one of their villages "eighty leagues above" the mouth of the Osage River, and discovered, also, an Osage village in what is now Saline County, "thirty leagues distant from the Grand village" and "one league, southwest," from the village of the Missouri.[4]

There is no evidence, from either the French period (1673–1762) or the Spanish period (1762–1800), which can be translated into terms of modern geography to enable us to locate precisely the Osage villages. At the same time, there is no reason for doubting that the greater part of them were situated in, or very near, the present Vernon County throughout the eighteenth century. There is good reason, too, for believing that the Osage were the *sole* occupants of that region, not only throughout the eighteenth century, but until 1825, when they ceded to the United States the last of their claims to Missouri.

In 1769 Rui reported to Governor O'Reilly: "The River of the Big

[1] This study was made possible by grants-in-aid from the Social Science Research Council of New York and the Research Council of the University of Missouri.

[2] Griffin, 1937*a*; Mott, 1938, *passim*; Berry and Chapman, 1942, pp. 290 ff.

[3] Hill and Wedel, 1936, pp. 67 f.; Griffin, 1937*b*; Wedel, 1940, p. 337; Harner, 1939, pp. 19 f; Baerreis, 1940, pp. 108 f; Dellinger and Dickinson, 1942, pp. 288 f.

[4] Margry, 1879–1888, Vol. 6, p. 310. In our Fig. 1 "B" indicates the Missouri village to which Du Tisné referred, "D" an Osage village, "C" a late Missouri site, "E" an old Missouri village mentioned by early nineteenth century explorers, "F" the place where Lewis and Clark camped, and "A" a prehistoric Oneota site. Other symbols are explained in the text.

Osages . . . goes to the tribe called by the same name, which is some 70 leagues from the mouth."[5] In 1777 Cruzat located them "180 leagues from St. Louis by water, and about 120 leagues overland, on the banks of a river emptying into the Misury, of about 140 leagues in length."[6] In 1785 they were reported to be living "120 leagues up the river."[7] A similar location is reported in 1795[8] and in 1798.[9]

We begin to get more useful references in the nineteenth century. Pike visited the Osage in 1806, and, while it is difficult to interpret his notes and maps, a few important facts emerge. At noon on August 18, Pike passed the mouth of the Marais des Cygnes and ascended the Little Osage, with a view to reaching the Indian villages. He was halted, at one o'clock, by a drift in the river approximately two or three miles from the mouth of the Little Osage. Pike thereupon sent to the nearby Osage village for horses to transport his baggage. We cannot escape the conclusion that, in 1806, both the Great and Little Osage had villages within a few miles of the confluence of the Marmaton and Little Osage.

Editors of Pike's notes have debated the whereabouts of these villages. Coues would place the Great Osage at the point marked "J" on the accompanying map (Fig. 1) and the Little Osage at the place marked "K."[10] Hart and Hulbert, on the other hand, place the Little Osage at about "L" and the Great Osage on the north bank of the Marmaton, nine miles above Coues' site, at approximately "M."[11]

In October, 1815, the Osage were visited by the Chouteau-De Mun Expedition. Their exact location cannot be determined from the record, but one village was certainly on the Marmaton, probably on the east bank, and a second village was a short distance to the west.[12]

In 1808, General William Clark was instructed to establish a fort and trading post on the Missouri River. He chose a site ("G," Fig. 1) very near the present town of Sibley, Missouri. The Osage gathered there to make their first treaty with the United States, wherein they surrendered all their lands north of the Missouri River and east of a line running due south from Ft. Osage to the Arkansas River.[13] The line was not run until 1816; when the surveyors reached the Osage country, the Indians "found that *the line passed within sight of their villages*," and "manifested such discontent, that there is no doubt they would forcibly have stopped the surveyors, had it not been for the successful interposition of Majr. Chouteau."[14]

A few years later, in 1821, the United Foreign Missionary Society

[5] Houck, 1909, Vol. 1, p. 63. [6] *Ibid.*, Vol. 1, p. 144.
[7] Nasatir, 1930, pp. 528, 532. [8] Houck, 1909, Vol. 2, p. 100.
[9] *Ibid.*, Vol. 2, p. 252. [10] Coues, 1895, pp. 386 fn. 42, 389 fn. 45.
[11] Hart and Hulbert, 1932, p. 50 fn. [12] De Mun, 1928, pp. 193, 195, 316.
[13] Gregg, 1937, *passim*. Cf. Royce, 1899. [14] Gregg, 1937, p. 59 fn.

sent its representatives into the field. They "looked for a suitable site on the Little Osage River," but, finding none, they chose a site "on the margin of the Marais de Cein River, about six miles above its junction with the Osage."[15] There they established the Harmony Mission, which continued to function, in a fashion, until 1837. The site of this mission ("H," Fig. 1) can be established beyond a doubt.[16] The writers have visited it and examined the ruins. Moreover, we have the word of one of the missionaries that they were "within fifteen miles of the Great Osage village,"[17] an estimate which was doubtless not the airline distance.

Another source of information is George C. Sibley, for many years Factor at Ft. Osage. On October 1, 1820, he wrote to Thomas L. McKenney: "The Great Osages . . . live in one village on the Osage River, seventy-eight miles (measured) due south from Ft. Osage."[18] This measurement would reach but a few miles south of Harmony Mission; some have insisted, therefore, that the Osage were living in Bates County, within sight of the mission.[19] This, however, conflicts with the testimony of the missionary that the village was fifteen miles away.[20]

Maps give but little assistance, although virtually all of the mapmakers, from Marquette's time down into the nineteenth century, agree in locating the Osage near the headwaters of the river that bore their name. What is more significant is that they do not locate any other Indians in that territory. It was not until after 1825 that maps accurately portrayed the courses of the Marais des Cygnes, Little Osage, and Marmaton rivers, and it was in that year that the Osage relinquished all claim to lands in Missouri, They had left the state by 1822.

On the basis of the evidence, we believe: (1) that Osage village sites occur in Vernon County, within a ten-mile radius of the confluence of the Marmaton and Little Osage rivers, and (2) that village sites in that area on which trade material appears are almost certainly Osage. A tremendous burden of proof would seem to rest upon him who would attribute such remains to any other people.

Osage village remains are, of course, by no means limited to this area. The Osage were a rather nomadic people and ranged over a considerable territory, including large parts of Missouri, Arkansas, Kansas, and Oklahoma. We know that, in 1800, Chouteau persuaded a body of them to move to the Arkansas River region, and there are innumerable references to their settlements along the Neosho and Verdigris rivers, in Kansas and Oklahoma.[21] We know, also, that when Ft. Osage was

[15] Atkeson, 1918, pp. 61 f; Morse, 1822, p. 222. [16] Atkeson, 1918, pp. 62 f.
[17] Morse, 1822, p. 223. [18] *Ibid.*, p. 203.
[19] Atkeson, 1918, pp. 75 ff. [20] See above, fn. 17.
[21] Cf., e.g., Thwaites, 1904, Vol. 13, pp. 237, 274; Vol. 5, pp. 191 ff.; De Mun, 1928. pp. 196 ff.; Morse, 1822, pp. 203 f., 254.

established, in 1808, parties of Osage settled nearby and apparently remained almost continuously until the fort was abandoned in 1827.[22]

Of especial interest to us, however, is the Little Osage village in Saline County ("D," Fig. 1). We have discussed elsewhere[23] our reasons for assigning this site to the Osage, and recent investigations have served to confirm us in that theory.[24]

The field work for this study was conducted during the summers of 1940 and 1941. Our parties numbered never more than three or four individuals. We surveyed, but not as thoroughly as we should have liked, parts of Vernon County and of the neighboring counties of Bates, Cedar, Barton, and St. Clair. We examined the collections of local amateurs and visited the sites to which they directed us.

On the basis of this surface survey we concluded that there were three cultural manifestations in the area: (1) Woodland, characterized, among other things, by reddish brown to dark gray pottery with grit or crushed limestone temper (some shell), rough finish, and cord impressions or cord roughening on the exterior; (2) Hopewellian, characterized by buff to gray pottery with crushed limestone temper, incised cross-hatch, punch-and-boss, dentate stamp, or roulette designs, or combinations of these elements, on the rims and sometimes extending onto the body of the vessel; and (3) Osage, represented by four sites ("W," "X," "Y," and "Z," Fig. 1), the cultural material from which is discussed here. *We found trade material only on these four sites.*

Site "W." This village site is on the western edge of Green Valley Prairie, where the prairie breaks to the south to Old Town Creek, and to the west to the valley of the Marmaton. It covers approximately fifteen acres. We excavated an area of 750 square feet.

Artifacts came mostly from the surface, where there was a relative abundance of material. The excavation yielded few specimens and pottery was entirely lacking on the site. Large, round or oval, crudely-made flint scrapers far outnumbered other types of artifacts. It is probable that flint served much better for scrapers than did the metal tools of the traders and was therefore retained longer than other traits. Other artifacts include: small, triangular projectile points, large, notched or stemmed implements or points, and beveled knives of flint; mano stones and pitted hammerstones of quartzite, limestone, and sandstone; bun-shaped pestles of sandstone and quartzite; whetstones or abraders of sandstone; grooved sandstone arrowshaft smoothers; pipes of red and white claystone, siltstone, and catlinite; and many pieces of ground

[22] Cf., Gregg, 1937, pp. 57 f.; Thwaites, 1904, Vol. 5, p. 60; Vol. 6, pp. 59 ff

[23] Berry and Chapman, 1942, pp. 291 ff.

[24] Garraghan, 1928, pp. 262 f.; Nasatir, 1930, pp. 532 f.; Gregg, 1937, pp. 30 f.

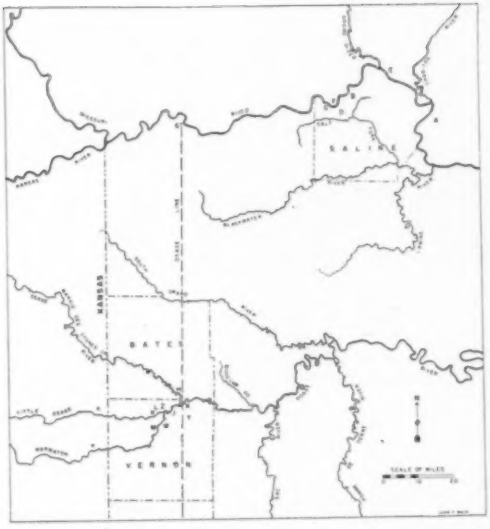
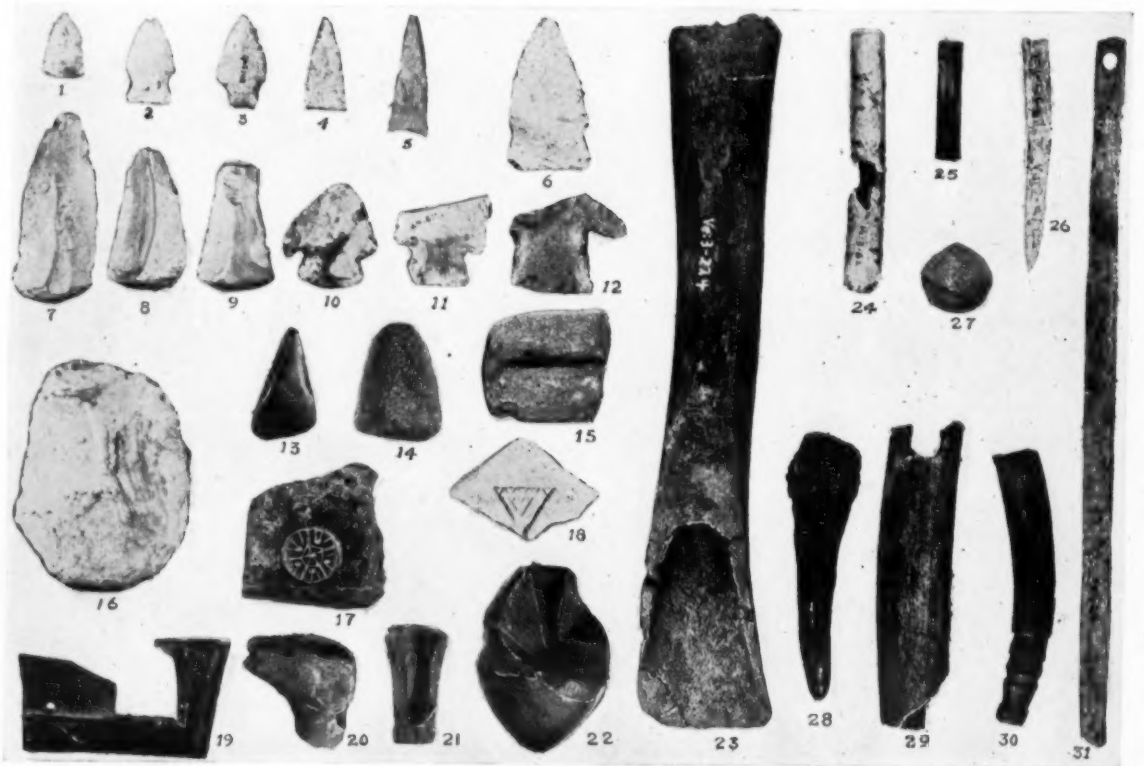
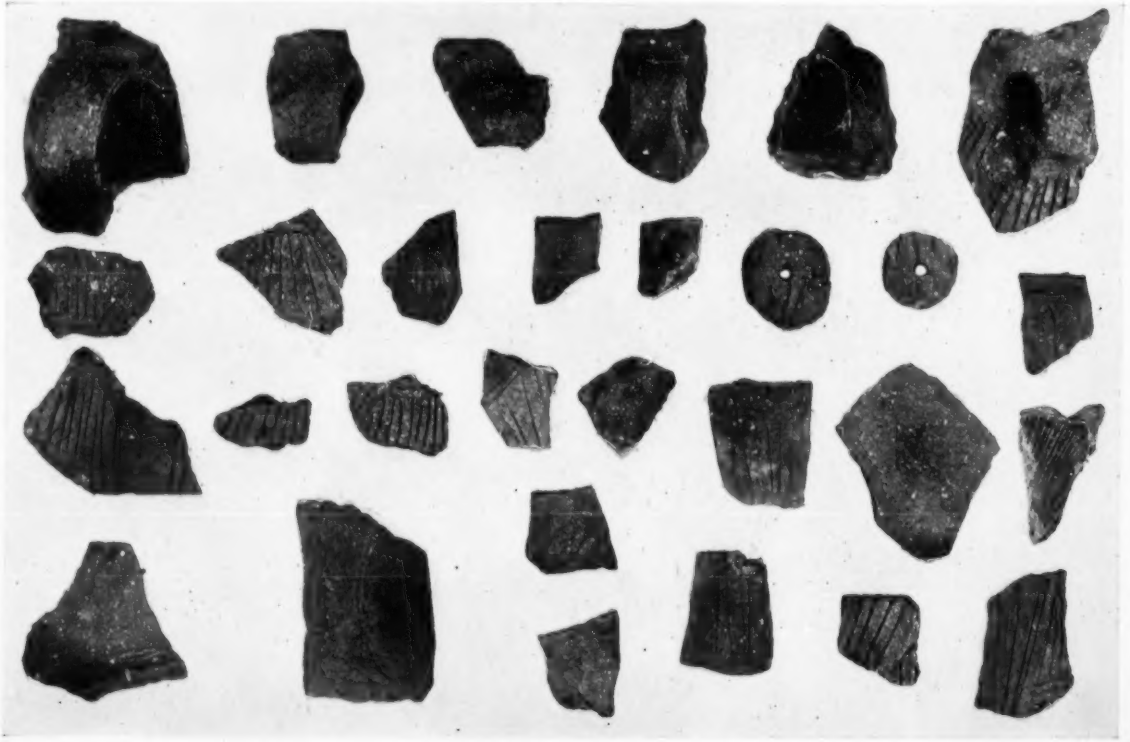


FIG. 1.—Missouri, west central portion, indicating location of sites discussed in text.



Artifacts from sites W, X, Y, and Z.

Artifacts from sites W, X, Y, and Z.



Pottery from Site Y.

Trade goods from sites W, X, Y, and Z.

hematite. Deer bones were plentiful, but there were no bone implements. Antler work was represented by one knife handle.

Contact material was abundant and included flint-lock rifle parts; iron axes, hoes, knives, and awls; fragments of copper kettles, bells, wire, projectile points, spangles, small sheet disks, rivets, and crucifixes; copper or brass buttons; porcelain and glass beads; fragments of glass bottles; clay pipes; crockery fragments; and small silver ornaments.

Site "X." This village is on a well-known spot—Halley's Bluff—a timberland overlooking the Osage River. It has been a popular picnic ground for generations. The location of a so-called "Osage trace," or trail, is still marked by a shallow depression winding its way along the top of the Bluff. The site has suffered from vandalism, there being a common belief that an Osage village stood there and that many members of the tribe were buried there. One of the most interesting features of the site are the pits cut into the soft sandstone at the base of the bluff. At one time there were twenty-three of these, but only eight now remain, protected by the overhanging rock. A geologist described them seventy years ago, as follows:

> They consist of a series of circular holes, twenty-three in number, dug down in the lower part of a thick sandstone, which forms the face of the bluff. The holes are five feet deep, on the average. They are larger at the bottom than at the top, being three feet across at the top, and five and a half feet in diameter at the bottom. They are only from one to three feet apart, and follow the course of the outcrop of the sandstone, which is north and south. They appear to have been made by some such instrument as a pick, faint marks of such a tool being still visible.[25]

These pits are strikingly similar in shape and size to those at sites "Z" and "B" (Fig. 1.).[26]

Our excavations consisted of a trench and several test pits on the camp site. These yielded very little cultural material, and we must depend, therefore, upon our own surface finds, upon the collection of the owner of the property, and upon information furnished by him. From his account, we conclude that the burials were primary and extended and that with them were found porcelain and glass beads, brass and iron ear ornaments and a catlinite pipe. Large stones were reported to have covered the graves.

Artifacts from the surface included small triangular flint points; large notched and stemmed flint implements; large, crude, flint scrapers; pitted hammerstones; mano stones; ground hematite; iron axes; and cut sheet-copper projectile points. No pottery was found.

Site "Y." This village covers about thirty acres, or more, on the highest part of an extensive ridge. The entire site, with the exception

[25] Broadhead, 1874, p. 152. [26] Cf. Berry and Chapman, 1942, p. 295.

Trade goods from sites W, X, Y, and Z.

of a garden plot and a small alfalfa field, is in pasture and has not been cultivated for many years. Part of it is now in timber, and, so far as is known, has never been cultivated. A thick layer of sandstone underlies the surface and frequently outcrops on the more sloping portions of the site. It is evident that the Indians took advantage of this easily-worked material, for hardly a rock protrudes which does not have either grooves, cups, or large depressions cut or ground into its surface. The nearest water is Coal Creek, about half a mile to the east. The owner informs us that at one time a good spring emerged from the south slope of the ridge, and it is possible that this spring constituted the water supply for the village.

We excavated an area of 600 square feet. In five refuse "trenches" 3 or 4 feet wide, 8–15 feet long, 24 to 30 inches deep, and often extending down to bedrock, we found animal bones, mainly those of deer; broken artifacts, ashes, and other refuse.

Pottery fragments were the most abundant of the cultural material. The sherds were very small, and the shapes of the vessels could not be determined. Of a total of 1673 sherds, 79 were rim sherds, 393 were decorated body sherds, 826 were undecorated body sherds, 357 were body sherds with one surface missing, 13 were fragments of handles, and 4 were lugs; there was one grit-tempered sherd.

Rims were predominantly straight in cross-section, but a few were slightly recurved. Lips were either rounded or flattened. The ware varied from buff to dark gray in color; the surface had a smooth to roughly smoothed finish, and a few sherds had a slight polish. Hardness averaged $2\frac{1}{2}$ to 3 (calcite), and thickness ranged from $\frac{1}{8}$ to $\frac{7}{8}$ inch. The paste was light gray in color, and tempering material consisted of fine to coarsely ground river-mussel shells.

Decorations were sometimes present on the lip surface, the outer surface of the rim, and/or the shoulder of the vessels. The lip decorations included punctations, finger impressions, and incisions straight or diagonally across the lip surface. Only two sherds were decorated on the outer rim surface. These decorations were incised lines, made after firing. Shoulder decorations were principally straight parallel incised lines, usually made before firing, often in groups at right angles to each other. The chief design motif was hatching. Punctations were sometimes present bordering the incised lines or filling in areas between the hatched elements. Curvilinear incised lines occurred rarely. The width of the lines varied from less than $\frac{1}{64}$ to $\frac{1}{8}$ inch.

Handles were of the strap or loop variety and extended vertically from the outer rim surface or the lip to the body surface. They were not decorated. The number of handles per vessel could not be determined.

Simple undecorated protrusions, or lugs, attached to the outer rim surface midway between the neck and the lip, were present on four sherds.

Eight complete and eleven fragmentary perforated pottery disks, cut from plain and decorated sherds, were discovered.

Small, well-made, triangular flint projectile points were the dominant type of chipped stonework. The chipping was mainly primary, although some secondary chipping was present. Of the 49 points found, 29 had straight bases, 16 concave bases, and 4 convex bases. Only seven large notched and stemmed flint implements or points were found. All showed primary chipping and were not especially well-made. Small flint end-scrapers were found, as were pieces of beveled flint knives. Large, crudely-made, round or oval scrapers were almost as numerous as the triangular points.

Rather unusual were thirty-nine conical pieces of sandstone, about two inches in height, having truncated bases and either rounded or pointed apexes (Plate I, *14*). Many fragments of elbow-type pipes were found in the excavation, and one complete pipe came from the surface. One (Plate I, *22*) appeared to be a combination pipe and war club.

A perforated catlinite disk, similar in size and shape to the pottery disks, was obtained from the surface. Pieces of ground hematite were common (Plate I, *13*). Sandstone abraders, whetstones, pitted hammerstones, grooved arrowshaft smoothers, and bun-shaped limestone pestles were common.

Two "molds" (Plate I, *17*, *18*) were found, one of red siltstone, with a circular design on it, and the other of white claystone, with a triangular design. The function of these objects and a justification for calling them "molds" is suggested in a sixty-year-old reference.[27]

Several hollow bone handles were found, one of which had an iron awl in situ (Plate III, *1*). Other bone work included thin, flat, eyed needles; polished tubes or beads (Plate I, *24*, *25*); an unperforated bone disk (Plate I, *27*); a sharpened leg-bone scraper (Plate I, *23*); draw shaves of elk-ribs; arrowshaft straighteners or wrenches made from ribs; a bone "paint brush"; split bone awls; and fragments of elk and bison scapula hoes. We found a number of deer antlers with the tines removed, but the only antler artifacts discovered were a highly carved ornament (Plate I, *30*) and a flaking tool (Plate I, *28*).

Parts of flint-lock rifles were very numerous, as were many other trade articles, which are enumerated in the accompanying table.

Site "Z." This is near the present town of Arthur, Missouri and may quite possibly be the Little Osage village to which Pike referred. Only

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[27] Lykins, 1882, p. 535.

five acres of the site now remain, but old residents tell us that it formerly covered about thirty acres. Strip-mining operations for coal have destroyed the greater part of it.

During our two weeks' stay, an area of approximately 500 square feet was excavated. Fire pits and storage and refuse pits were discovered, evidently within house structures, but the soil was so hard and dry that it was impossible to determine the house outlines.

No pottery was found, and trade goods far outnumbered the aboriginal materials. Large, crude, flint scrapers were abundant. Other stone artifacts are enumerated in the accompanying table. A fragment of a two-piece bone handle and a perforated bear-claw ornament were the only bone work found. Contact material is given in the table.

Site "D." This site is located on the northern edge of the Petitesas Plain, in Saline County. At this point, the plain, bordered on the south by the Salt Fork, is two miles in width. At the northern edge there is a vertical bluff, at the foot of which, one-hundred feet below, lie the Missouri River bottoms. At one time the river probably flowed near the base of the bluff. The site covers about thirteen acres. At the base of the bluff there are springs which may have furnished the village with its water. The land has been in cultivation for many years, and the owner reports that about seven years ago he plowed the ground to a depth of nine inches. Since the cultural material seldom extends below that point, except in refuse pits, we worked most of the time in disturbed areas. Erosion, too, had done much damage.

Although no evidence of house structures was encountered, several features which were probably associated with houses were found. There was the lower part of a fireplace, circular in shape, with a burnt clay base and ashes in the slightly concave top. The owner reports that he turned up a great many pieces of burnt clay. We found one pit with apparently vertical sides, 41 inches wide and extending 42 inches below the surface. Within the pit were wood ashes; burnt clay; bones of animals and birds; charred grass, corn cobs, beads, and seeds; a few potsherds, copper spangles, iron knives, and flint chips.

Cultural material was not abundant, perhaps because the site has been a popular spot for relic collectors for a generation. No worked bone was found, but throughout the excavation we found the bones of deer, bison, dogs, wolves, ground-hogs, turkeys, and ducks.

Only 34 sherds were found, of which 33 were shell-tempered and one was sand-tempered. The color of the shell-tempered ware varied from gray to buff. One sherd had what appeared to be a cloth impression on it. The only rim sherd found had a flat, undecorated lip and was too small to allow any inference as to the vessel's shape or size. All sherds were very small and varied in thickness from $\frac{3}{16}$ to $\frac{3}{8}$ inch.

DISTRIBUTION OF CULTURE TRAITS IN FIVE VILLAGE SITES, POSSIBLY OSAGE

Traits	*Sites*				
	W	X	Y	Z	D
Houses: containing 1–6 fireplaces, storage pits, refuse pits	x			x	x
Burials: primary, extended, some grave goods		x(r)			(r)
Pits: small storage pits	x			x	
bell-shaped, or vertical sides	x			x	x
rectangular refuse trenches	x		x		
Pottery: buff to gray, gray paste, smooth finish			x		x
rims, straight or slightly recurved			x		
handles and lugs, simple, undecorated			x		
decorations					
lip: punctuations, finger impressions, incising			x		
outer rim: incised lines			x		
shoulder: incised lines, punctuations			x		
design motif: hatching predominant			x		
temper: shell (quartz sand very rare)			x		x
Pottery disks			x		
Small, triangular, flint projectile points	x	x	x	x	x
Large notched or stemmed flint implements	x	x	x	x	x
Flint blades, elliptical, or leaf-shaped					x
Large beveled flint knives	x		x		x
Large, crude, oval or round flint scrapers	x	x	x	x	x
Small flint end scrapers	x		x	x	x
Sandstone cones			x		
Grooved sandstone arrowshaft smoothers	x		x	x	x
Sandstone abrading stones or whetstones	x		x	x	x
Sandstone and quartzite pitted hammerstones	x	x	x	x	x
Bun-shaped pestles of sandstone, quartzite, and limestone	x		x	x	
Mano stones of siltstone, limestone, sandstone	x	x	x	x	
Ground hematite of various shapes	x	x	x	x	x
Perforated stone disks			x		
Pipes: elbow type; of catlinite, siltstone, limestone, claystone, sandstone	x	x	x		x
Molds: geometric carvings on siltstone			x		x
Bone and antler: sharpened leg bone scrapers			x		
rib arrowshaft straighteners or wrenches			x		
split bone awls			x		
flat bone needles with eyes			x		
cylindrical, hollow bone or antler handles	x		x		
flat, two-piece bone handles			x	x	
small, polished, cylindrical tubes, beads			x		
"paint brushes"			x		
rib draw shaves			x		
unperforated bone disks			x		
hoes, of elk or bison scapulae			x		
flaker, of deer antler			x		
carved deer antler ornament			x		
Trade goods: flint-lock rifle parts, including flints	x	x	x	x	x
iron implements: axes	x	x	x	x	x
hoes	x		x	x	x
knives	x		x	x	x
awls	x		x	x	x
files	x(?)		x	x(?)	
arrow heads			x	x	x
copper objects: fragments of kettles	x		x	x	x
spangles	x		x	x	x
conical points			x	x	x
flat projectile points	x	x	x	x	x
bells	x		x	x	x
wire	x		x	x	x
sheet disks	x		x	x(?)	x
springs or coils			x		
crucifixes of copper and/or silver	x		x	x	
brass buttons	x				x
porcelain and glass beads; various shapes, sizes, and colors	x	x	x	x	x
fragments of glass bottles	x		x	x	
clay pipes	x		x	x	
crockery fragments	x		x	x	

(r) = reported.

Flint work consisted of small triangular points; large, stemmed, and leaf-shaped (elliptical) knives; large oval and small end-scrapers.

Ground stone was represented by sandstone abraders, whetstones, sandstone arrowshaft smoothers, granite hammerstones, ground hema-

tite, catlinite pipes of the elbow type, and two carved "molds." The pipes and "molds" were found on the surface.

Trade material was abundant, and the various traits are enumerated in the accompanying table. One of the local amateurs reported having dug up two extended burials.

One common feature of all of these sites (except Site "X") is that they are situated at least half a mile from the nearest sizable stream, and they all provide an extensive and unobstructed view of the surrounding country.

It would be unwise, of course, to base any conclusions about the archaeology of the Osage upon a survey so incomplete as ours, and upon excavations so limited. However, our discoveries suggest that the archaeological remains of the Osage fit into the Upper Mississippi phase, and perhaps even into the Oneota aspect. They suggest, also, the possibility that the Oneota may belong to the Dhegihan branch of the Sioux, as well as to the Chiweran. At any rate, when the problem of Dhegihan archaeology comes up for a solution, the material described in this report will have to be considered.

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ARCHAEOLOGICAL HORIZONS IN THE SOUTHERN ILLINOIS REGION[1]

JOHN W. BENNETT

WITH the recent completion of a number of excavation programs by the University of Chicago, Carbondale State Normal University, and the St. Louis Academy of Sciences, it is now possible to make a preliminary analysis of the aboriginal occupations of southern Illinois and adjoining areas. Much of the data may not be published for several years, so an introductory statement may be useful.

In this paper we will propose a chronological and cultural sequence based upon these excavated materials. Since the final analysis has not been accomplished, the conclusions expressed here are to be taken wholly as a progress report and subject to eventual revision and refinement.

The material will be discussed by period, following the divisions on the charts appended to this paper (Figs. 2 and 3). The horizons will be discussed in order, beginning with the earliest.

NON-POTTERY PERIOD

Artifacts probably assignable to the "shell mound" cultures of the Southeast have been found in two places in southern Illinois. This culture is the earliest in the southeastern area and is distributed along all the major river valleys, on the Gulf coast, and is hypothetically related to early cultures in the Lesser Antilles. The earliest levels lack pottery; the later levels feature a crude type of ceramics that seems to show continuity with the later pottery-making cultures.[2]

In Jackson County, at several sites near Carbondale excavated by Moreau Maxwell for Carbondale State Normal University and WPA, and by collectors, such artifacts as bannerstones, grooved axes, bell pestles, large crude dart points, and long blades with straight or concave bases have been found. These artifacts are more or less typical of shell mound cultures, and some were found at Carbondale in strata below the later horizons. Bannerstones have recently been shown to be weights for atlatls, or throwing-sticks.[3]

In Massac and Pope Counties, similar artifacts have been found on the surface by University of Chicago field parties. A shell mound has been found in Massac and will be excavated in 1944.

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[1] This paper was originally designed as a joint project with Mr. Moreau Maxwell, of Carbondale State Normal University and the University of Chicago. Maxwell was called for military service before collaboration could begin, however, and kindly placed his materials at the disposal of the present author.

[2] Haag, 1942. [3] Webb and Haag, 1939, p. 50.

In the St. Louis area, just across the river from Illinois, Robert Adams reports a non-pottery horizon below his earliest Woodland manifestation.[4] This culture features large, crude dart points and long blades similar to the Jackson County types, but no bannerstones or pestles were found. Presumably a generally similar horizon is represented, from which some of the more typical southeastern artifacts have been lost as a result of a northward attenuation.

EARLY WOODLAND PERIOD

Pottery was introduced in this period, which seems to be separated from the non-pottery horizon by a cultural and slight geological break. The pottery is all of the type known generally as "Woodland"—heavy, crude wares, with grit tempering and predominantly cord-marked surfaces. Artifacts are as yet uncertainly associated with this horizon.

In Jackson County, this period is represented by a thick, granular-tempered cord-marked ware that lies in the lower levels of the Crab Orchard site. It is definitely mixed with the early stage of the Crab Orchard occupation (Middle Woodland). In Massac County, at the Kincaid site, there is some evidence of an early cord-marked ware with thin walls and clay-grit temper, which was probably characteristic of an early stage of Lewis (Middle Woodland). The Massac County material seems to be unrelated to the early cord-marked ware at Crab Orchard.[5]

In the St. Louis area, in the lowest levels of a rock shelter, Adams has found a thick, uneven ware, tempered with crushed rock, associated with crude Woodland projectile points. This pottery is sometimes decorated with punched holes. It bears a general similarity to the early Woodland ware at the Crab Orchard site, and also to the "Red Ocher" pottery found in Fulton County.[6] Still another rock shelter manifestation near St. Louis displays cord-marked pottery with crushed quartz tempering, associated with crude notched points, the points being similar to Signal Butte types in Nebraska.[7]

The Fulton County sequence, although more typically a north-

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[4] Adams, 1941, pp. 191–193; Griffin, 1941*a*.

[5] It should be added (January, 1944) that more recent analysis of Kincaid and Carbondale Woodland materials alters this picture to some extent. In the newer interpretation, we would consider the earlier stages of Baumer and Crab Orchard as Early Woodland, the later stages, as in this paper, as Middle Woodland. This view tends to revise the conclusion (in the section on Middle Woodland) that Baumer *appeared* in southern Illinois later than elsewhere. Instead, it is felt that although the Baumer cultures persisted somewhat later, as the Hopewellian crossfinds show, they were present in the region as early as their relatives in the Southeast. (MacNeish, N. D.)

[6] Cole and Deuel, 1937, pp. 48–49. [7] Adams, 1941, pp. 193–194.

central series, will be included throughout this paper for contrast. The Red Ocher manifestation, related to the Adena-like cultures, probably belongs in this general early period, as does the incised and cord-marked Black Sand pottery.[8]

MIDDLE WOODLAND PERIOD

In this general period, a series of large-scale cultural developments took place. In Massac County, another variety of cord-marked pottery, tempered with clay-grit and possibly a descendant of the earlier type, appeared, associated with elongated, notched, triangular points and permanent villages with rectangular log-post houses. This Lewis horizon was approximately contemporaneous with (slightly later than) the Baumer culture, which features fabric-impressed, limestone-sand-clay-tempered pottery, associated with a well-developed Woodland stone tool complex, including stone pendants and concave-sided gorgets, and permanent villages with large, square post-supported houses. Some of the pottery in Baumer displays traits suggestive of a developing Hopewellian culture—cross-hatched cambered rims, flat bases, etc. Baumer is significantly related to the Adena horizons, "ancestors" of Hopewell, through cross finds of pottery in cultures of the same general type as Baumer in the Tennessee River Valley.

In Jackson County, a similar situation was present in the Raymond (Lewis-like) and Crab Orchard (Baumer-like) manifestations. A typical Baumer-Crab Orchard flat-based, fabric-impressed vessel from Jackson County has been recently illustrated by Griffin,[9] who suggests the relationship to Illinois Hopewellian.

In Jackson County, the Baumer-like horizon met, and was possibly influenced by, a Hopewellian manifestation from the Illinois River Valley area. The cultural development responsible for Baumer seems to have moved down the Tennessee River and appeared in southern Illinois at a rather late date, which would allow sufficient time to contact the already-developed Hopewellian cultures in Illinois. Thus a culture with proto-Hopewellian base finally came into contact with the later culture which developed out of the relatives of the former. Baumer-like sherds are frequently found in Hopewellian mounds in the Illinois Valley.[10]

In the St. Louis area, deposits in rock shelters indicate the presence of two early horizons that have already been discussed as representative of the Early Woodland period. However, there is reason to believe they may have continued into this Middle period. Red Ocher and Black Sand of Fulton County likewise may be transitional in time.

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[8] Cole and Deuel, 1937, p. 40.

[9] Griffin, 1941*a*, Pl. 16 and p. 223.

[10] Griffin and Morgan, 1941, Pl. 12, *3*.

In Fulton and Clinton Counties the typical central Illinois sequences —Central Basin and Hopewellian—occur. These horizons are closely contemporaneous, but there seems to be evidence for a slight precedence of Central Basin.[11] At the Boulder site in Clinton County, excavated by the University of Chicago,[12] Hopewellian-Central Basin sherds were mixed with shell-tempered Mississippian pottery in the upper levels, in such a manner as to suggest a barely possible temporal overlap between these cultures.

Another horizon to be included in this general Middle Woodland period is represented at the Korando site[13] in Jackson County. The pottery and general culture of this site are related to a clay-tempered horizon in the central and lower Mississippi Valley, and represent a northern frontier of this complex in Illinois. The site apparently had a continuous occupation from Baumer times to late Middle Mississippi, when it influenced a Mississippi manifestation in the St. Louis area. Definite similarities between the Korando cord-marked wares and the Lewis types also can be seen, attesting to the basic generic relationship.

Recent evidence from the Kincaid site demonstrates the existence of an *early Middle Mississippi horizon*, associated with Old Village Cahokia polished plainware, Baytown clay-tempered ware[14] and Lewis pottery. This Mississippi manifestation would be directly ancestral to the classic Kincaid component. This type of sequence is matched in western Tennessee, where an early Kincaid-like Mississippi blended with a cord-marked horizon.

CLASSIC MIDDLE MISSISSIPPI PERIOD

The Woodland manifestations of the preceding period apparently vanished just previous to the large-scale occupation of the area by Mississippi cultures. The Boulder site may show the evidence for a partial mixing, but in any case this must have been slight.

The Korando site was apparently occupied throughout this Classic period, but its influence was felt only by a single Middle Mississippi manifestation—the Plattin focus, in the St. Louis area.[15] Cord-marked, clay-tempered ware with an abundance of Korando large bowl forms in Plattin suggest this influence.

In Massac County, a late survival of Lewis may have persisted at the Kincaid site.

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[11] Cole and Deuel, 1937, p. 263. [12] Chamberlain, N. D.

[13] Excavated by Dr. A. R. Kelly for the University of Illinois. See Griffin, 1941*b*, p. 5, for a brief published analysis of the pottery and relationships.

[14] A horizon in the lower and middle Mississippi Valley, non-Mississippi, but contemporaneous with developing Mississippi to the east. [15] Adams, 1941, pp. 207 ff.

The dominant cultures of this period were the Old Village[16] manifestation at the Cahokia site in the St. Louis area and the Kincaid component at the Kincaid site in Massac County. The former seems to have been a Middle Mississippi culture with Mississippi Valley affiliations; the latter a Middle Mississippi culture with affiliations to the southeast, in the Tennessee-Cumberland drainage. The evidence from other areas indicates that the ancestors of these cultures entered Illinois and Missouri from the Mississippi and Tennessee rivers, respectively. No evidence of local intermixing other than the presence of Old Village trade sherds at Kincaid can be found.

The culture of these great sites features shell-tempered pottery appearing in two main divisions, "utilitarian" and "decorative." The former is relatively crude, and occurs in large jars and bowls; the latter is fine and polished, and occurs as bowls, water bottles, effigy forms, etc. Old Village decorative pottery has thin walls, angular shoulders, and an abundance of incised designs on the rim above the shoulder; jars are the most common vessel form. Kincaid types have rare incising, and vessel forms are predominantly plates, bottles, and bowls. Utilitarian wares are roughly similar for both manifestations. Stone artifacts include small triangular notched points, generalized flake-scrapers, drills, and other types. Bone and shell artifacts are common. Art and ceremonial forms, such as gorgets, ear plugs, pendants, copper ear spools and plates, are also frequent. Villages were built around large groups of mounds used as substructures for public buildings.

In this same period, another Middle Mississippi horizon was developing in central Illinois and in the St. Louis area. This culture is related to the Old Village manifestation at Cahokia but seems to be slightly later. Griffin has called this the Trappist focus; Kelly termed it the "Bean Pot" culture.[17] Cole and Deuel designated the Fulton County representative the Spoon River focus.[18] This horizon features cruder shell-tempered pottery types, with the wide, cylindrical, handled "bean pot" as a common vessel form. Cord-marked and red-slipped pottery was also common. Artifacts are generally similar to Old Village, but feature a few more or less unique forms, such as perforated shell disks and unnotched triangular points. Ceremonial objects featuring the cross, eagle dancers, plumed serpent, and other motifs show the northward spread of the late southern "Buzzard Cult."

The Kincaid component also has trade sherds from this later Trappist focus. For this reason we have placed it as slightly later than Old

[16] Kelly, 1932; Griffin, 1941*b*. [17] Kelly, 1932; Griffin, 1941*b*.
[18] Cole and Deuel, 1937, pp. 201 ff.

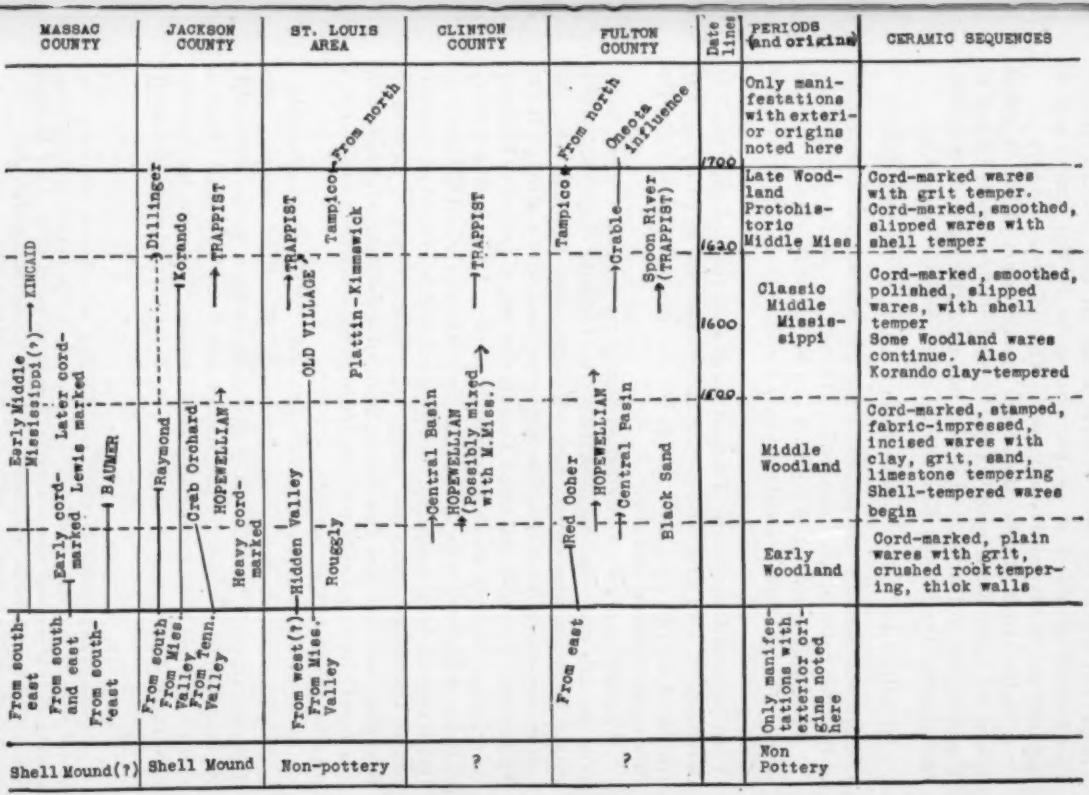

FIG. 2.—Cultural sequence and chronology in southern Illinois, showing relative time spans, possible genetic sequences, and possible origins of non-indigenous cultures. (See footnotes 5 and 24 for possible revisions.)

Village, but within the same general period. It may overlap into the Protohistoric period, just as Trappist seems to do. Late types of Korando sherds have also been found in Kincaid refuse.

A slightly later Middle Mississippi manifestation in the St. Louis area is the Kimmswick focus.[19] This is probably more closely related to Trappist than to Plattin, and it does not show the Korando influence. Nevertheless Plattin and Kimmswick are undeniably related.

PROTOHISTORIC MIDDLE MISSISSIPPI—LATE WOODLAND PERIOD

Although actually two periods, these are grouped together because of the close cultural relationships found between horizons within them.

No representative of this period can be found in Massac County, save for the hint that Kincaid may have continued into the earlier years of the period.

In Jackson County, the Trappist focus sites reached their peak of development, with large mounds and villages enclosed by palisades. The custom of burying the dead in stone-box graves on the bluffs along the Mississippi became common.

Woodland cultures continued to flourish in Jackson County, however. In this case, the manifestation (the Dillinger focus) showed a rather heterogeneous facies, with elements from Korando and the earlier cord-marked horizons like Raymond, and with a strong Middle Mississippi (Trappist) influence. Despite this mixed ancestry, Dillinger constitutes a distinct, easily-recognized complex. A tremendous variety of bone tools seems to be a distinguishing characteristic. Dillinger pottery is clay- and grit-tempered, cord-paddled, and has round or conoidal bases. Mississippi traits are: effigy lugs, applique fillets, incising in triangles, strap handles, and others. Some rims show raised corners and a collared effect, probably attributable to an influence from the Tampico manifestations farther north.

In the St. Louis area and in Fulton County, Trappist sites flourished and influenced another contemporaneous Woodland complex, the Tampico aspect.[20] Various foci of this complex have been established, the best-known of which are the Maples mills focus[21] of Fulton County, and the Illinois Bluff focus,[22] of Jersey County. This complex features cord-marked pottery of two types—a heavy utilitarian ware and small,

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[19] Adams, 1941, pp. 212 ff.

[20] Cole and Deuel called this the "Tampico phase." It has become increasingly apparent, however, that these manifestations are basically similar to Lake Michigan phase complexes. It is proposed here to consider Tampico an aspect of the Lake Michigan phase. A relationship to the stone vault complex of Missouri is indicated, also.

[21] Cole and Deuel, 1937, pp. 203 ff. [22] Titterington, 1935.

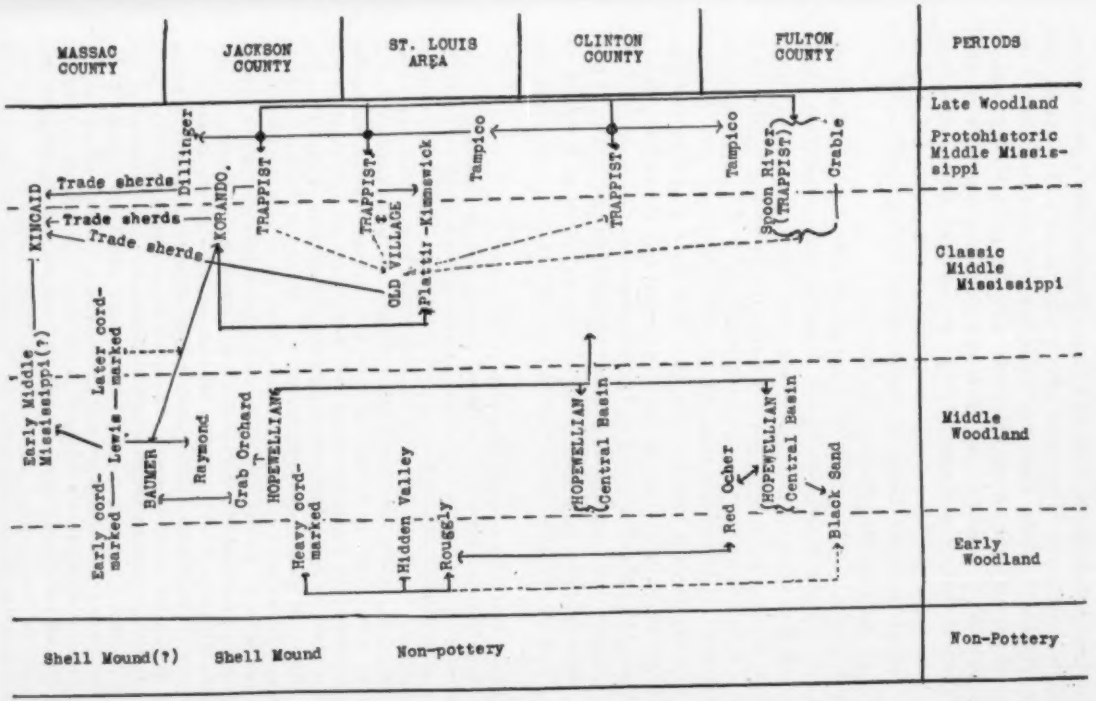

FIG. 3.—Cultural affiliations and influences in southern Illinois. Double-headed arrows imply a general development: single-headed arrows imply direction of influence in; dotted arrows express doubtful relationship; brackets indicate virtual cultural identity. (See footnotes 5 and 24 for possible revisions.)

coconut-shaped mortuary pots with squared orifices and raised corners. Artifacts show heavy Mississippi influence in the use of shell, bone, and small triangular points. Pipes and pottery in the northern sites of the Tampico aspect show direct affiliations with the Lake Michigan phase of Woodland in Wisconsin and probably represent a late southward migration of that general complex. The use of stone slabs surrounding the skeletons in burial mounds may represent a continuation of an Hopewellian tradition. Some of the mounds[23] feature incinerary clay platforms, another Hopewellian-like trait.[24]

In Fulton County, a series of Trappist sites show strong influences from the Oneota aspect, an Upper Mississippi manifestation partly attributable to the protohistoric and historic Chiwere Sioux. The largest of these is the Crable site. Since the relative time span of Oneota is known, this influence serves to date the Trappist manifestations and demonstrate the lateness of these Middle Mississippi cultures. Another clue to chronology is found in the fact that the Cahokia Old Village culture seems to have been partially ancestral to Oneota.[25] If, then, a developed Oneota influenced the Trappist complex, we must conclude that Trappist continued on into a later period than Old Village. Then, since both Trappist and Old Village sherds are found at Kincaid, we must conclude that the final stage of the Kincaid occupation was also

[23] Griffin, 1932 (Parker Heights Mound, in Adams County).

[24] Since this paper was written additional research upon the Woodland complex represented by these various "Tampico" sites leads the author to revise and expand his interpretations in certain respects. It now appears that the Stone Vault-Tampico complex may represent a Woodland horizon that persisted in the Illinois-Missouri region from Hopewellian times close to the historic period. Wedel's conclusions (*Archeological Investigations in Platte and Clay Counties, Missouri*, U. S. National Museum, Bulletin 183, 1943) substantiate this conclusion in that they strongly suggest a Hopewellian contemporaneity for the Stone Vault and related manifestations in the Kansas City area. Parker Heights, in Illinois, bears close similarities to the general Hopewellian type in northwestern Illinois and northeastern Iowa, and also to Stone Vault manifestations in Illinois and Missouri. Richard MacNeish (unpublished MSS, Univ. of Chicago) has pointed out the ceramic relationships between such Middle Woodland cultures as Lewis-Raymond and the Stone Vault pottery from Missouri and Illinois. On the other hand, the more northerly Illinois Tampico-like sites indicate late Lake Michigan ceramic traits plus Trappist Middle Mississippi influence. All this leads us to conclude that Stone Vault-Tampico Woodland manifestations have a somewhat unique history by themselves, and should be regarded rather as a complex of equal stature with others discussed in this paper than as merely a late development of Lake Michigan. Our charts should accordingly be revised to include Parker Heights and some Stone Vault components in Middle Woodland, as related to Lewis, Korando, et al. These cultures probably continued, like Korando, into the Late Woodland period (January, 1944).

[25] Sites in Jo Daviess County in northwestern Illinois show an Old Village-like culture beginning to differentiate into an Oneota-like Upper culture. Bennett, N.D.

relatively late. This would give a guess-date for this final stage of about 1575–1625.

Figure 2 shows these approximate relative dates, carried back to the beginning of the Classic Middle Mississippi period, about 1500. Beyond that we have no positive comparative evidence. Figure 3 shows affiliations and genetic sequences more completely.

GENERAL REMARKS

These sequences are admittedly based largely upon pottery. It is only in the later periods that the entire complexes can be shown to have genetic and affiliative significance. With further excavation and analysis these earlier horizons may be brought into a fuller comparison. Although not represented here, excavations by Glenn Black for the Indiana Historical Society have revealed a similar sequence for southern Indiana, with the addition of a clearly represented Adena horizon.

The most striking characteristic of the picture for southern Illinois in general is the evidence of a mingling of Southeastern and more typically Northern cultures. The Massac sequence is Southeastern, the Jackson sequence is Southeastern and Northern, and the St. Louis sequence is Northern, with some traces of the Southeastern influences. It is perhaps significant that in this general area where these influences merged we get a continuous cultural development from Early Woodland through Middle Woodland and, via Korando, through to Late Woodland and Middle Mississippi. In the other areas, the break between Middle Woodland and Classic Middle Mississippi is noticeable.

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University of Chicago
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AN HYPOTHESIS FOR THE IDENTIFICATION OF THE ILLINOIS CONFEDERACY WITH THE MIDDLE MISSISSIPPI CULTURE IN ILLINOIS

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THE hypothesis presented in this paper is based upon the correlation of a set of archaeological data with a sequence of historic events. The ideas incorporated here developed from a series of discussions concerning the relationship of the Middle Mississippi cultural manifestation in central Illinois with the Upper Mississippi Oneota culture and with influences which seem to derive from the Missouri-Arkansas region. In the course of this exchange of data, the writers became aware of the fact that a number of recent developments in Southeastern and Middle Western archaeology point to the conclusion that the Middle Mississippi culture in the present state of Illinois represents the material culture of the tribes of the Illinawek Confederacy. Evidence leading to this identification comes from a number of sources, both archaeological and ethno-historical. It must be stressed that the historical reconstruction proposed here is entirely hypothetical and tentative, and is based on inference from a number of lines of reasoning.

The first type of evidence is distributional. The Illinawek Confederacy, when first recorded at the end of the seventeenth century, occupied roughly the southern two-thirds of the present state of Illinois. Somewhat earlier, the Illinawek were reported to have ranged as far north as Green Bay, Wisconsin,[1] and to have had permanent villages in southern Wisconsin. By the time of Marquette and La Salle the Illinawek, or Illinois, were the only permanent occupants of the area from the Rock River south to the Ohio and west to the Mississippi. There are references to bands of the Illinawek being seen on the west bank of the Mississippi, in what is now southeastern Iowa, in 1673. This fact is significant, as will be shown later. The area of the Confederacy coincides nicely with the known region of heavy Middle Mississippi occupation. Furthermore, the widespread uniformity of Middle Mississippi culture argues for fairly close social and political ties among the various groups represented. As an effort toward the more exact application of the distributional approach, we may take the situation at Lake Pimitoui, or Peoria, on the Illinois River. Several of the French accounts mention the fact that a number of Illinois villages of the Peoria tribe stood around the shores of Lake Peoria. A survey of sites in this area has shown that the majority are Middle Mississippian.

[1] Hodge, 1912, Vol. 1, p. 597.

A second line of evidence is chronological. There is increasing reason for placing the Middle Mississippi culture in the late sixteenth and the seventeenth centuries. The fact that De Soto did not mention some of the large and spectacular southern sites has been taken to mean that the truncated pyramid mounds such as are found at Etowah and Cahokia very likely had not been built at the time of the earliest European exploration. This is a key assumption in the reconstruction of the "Buzzard Cult" by Ford and Willey.[2] If it is true that Middle Mississippi culture reached its major development after the first European contact, then the principal period of occupation must have been in the seventeenth century. Since we have historical evidence for the fact that the Illinois occupied the region in 1673, at which time it was considered to be their ancestral home, no time is left for an intervening occupation by some other prehistoric group, especially in view of the fact that the internal development of Mississippian culture is such as to have required some time. Chronological evidence thus strongly indicates that the Confederacy must be responsible for the Mississippian remains, which from archaeological evidence, are the latest known.

A series of interesting problems arises from the material found at the Crable site, which is at the southern end of Fulton county, in Illinois.[3] This site shows a composite culture made up almost equally of Spoon River (Middle Mississippi) traits and Oneota (Upper Mississippi) traits. Combined with these is a series of traits such as tripod vessels, stone "scepters," and engraved shell gorgets which seem related to the Buzzard Cult and are derived from the south, possibly from the Missouri-Arkansas area. Crable differs from previously known Oneota sites in that it shows an obvious blending of Oneota with another culture and in that it contains no European trade material. Any attempt to deal with Middle Mississippi in Illinois must now take into account the circumstances which would produce this combination of cultural traditions.

Oneota has been identified in Iowa with the Chiwere Sioux[4] and in Missouri with the Missouri, a southern Siouan group.[5] This would seem to present a barrier to identifying Oneota with the Algonkian Illinois. However, the French found that the Quapaw, a Siouan tribe related to the Missouri, had excellent knowledge of the Illinois and were trading with them. In 1761 Du Pratz reported that the Michigamea and other Illinawek bands were living with the Quapaw.[6] La Salle, in 1680, listed the Quapaw as members of the Illinawek Confederacy.[7] These facts

[2] Ford and Willey, 1941, pp. 325–363. [3] Smith, 1942.
[4] Mott, 1938. [5] Berry and Chapman, 1942.
[6] Pease and Werner, 1934, p. 389. [7] *Ibid.*, p. 5.

seem to indicate that the Illinawek were on friendly, if not intimate, terms with the Quapaw and must have been influenced by their culture. Another contact with Oneota culture would have occurred when the Illinawek were in southeastern Iowa.

The fact that most Oneota sites are contact sites means that the Oneota complex is a late development, presumably after 1675. The absence of trade material at Crable indicates that this site is one of the earliest of the Oneota sites. This conclusion is borne out by the presence at Crable of two distinct complexes—Spoon River and Oneota. Following the hypothesis proposed in this paper, we would explain Crable as the result of the impact of relations with Oneota Siouan groups upon the local Spoon River focus of Middle Mississippi. Crable also contains materials associated with the Buzzard Cult complex of the lower Mississippi basin. These materials include fine shell-tempered tripod vessels, painted pottery, a stone mace, and engraved shell gorgets. These certainly came from the south. This may possibly point to the Quapaw as the transmitters of such a combination of Buzzard Cult and Oneota traits. The Quapaw are the only group known to the writers who were qualified for this role on both historical and archaeological grounds. It is true that as yet no link has been shown between Oneota and the Buzzard Cult in the Quapaw area, but it must be remembered that the sites reported on by Berry and Chapman are from the eighteenth century, after the cult had disappeared. The logical place to look for such a combination would be in the many large town sites mentioned by De Soto as located along the Mississippi River below what is now Memphis. These would date from the late sixteenth and early seventeenth centuries.

The crucial years in which such a combination as is found at Crable could have taken place may provide the key for the chronological placing of many cultural changes which occurred in late protohistoric times. Granting the assumptions which have been made here, Crable must have been occupied at a time when the Buzzard Cult, a reaction to white contact and to pressure from the eastern tribes, was flourishing; this must have occurred after the Illinawek had started to change their old culture and to adopt a new complex from the west, but before European trade material had become abundant enough to be found among archaeological remains. As a possible explanation for increased contact with the Siouan people to the west and the concomitant disruption of the earlier culture pattern, there is the fact that from 1655 to 1667 the Illinawek were harassed by the Iroquois and were driven to the Mississippi for a short time.[8] This would account for the reported presence of

[8] Hodge, 1912, Vol. 1, p. 597.

Illinawek tribes in Iowa in 1673. From the French account, we have evidence that this group was even then moving back into central Illinois. The circumstances required to produce the Crable blend would have existed from about 1675 to 1725.

There is one cultural manifestation which must be dealt with in any effort to equate Middle Mississippi with an historic group; this is the Maple Mills or Tampico culture. It has been apparent from the first that Maple Mills is a late Woodland culture with considerable Mississippian influence. In some cases it has been thought to be later than Mississippian and to represent a resurgence of Woodland culture. However, the writers contend that Tampico can equally well be interpreted as a remnant of the earlier Woodland occupation which lingered on into the period of Mississippian domination and disappeared before historic times. The trend of development within Tampico is toward the acceptance of Mississippian forms and techniques, which indicates that the Woodland tradition was being discarded in favor of the Mississippian—in other words, the Woodland culture was being assimilated. In given instances, the Tampico culture might be later at a site than the Mississippian, but for the area as a whole it was either assimilated or extinct by the time of European contact. Tampico does not constitute a stumbling block to the equation of Middle Mississippi with the historic Illinois.

In summary, the hypothesis presented here may be reduced to the following historical reconstruction:

The ancestral groups of the Illinawek were the bearers of Middle Mississippi culture in Illinois. These people occupied most of the area of the present state of Illinois, and for a time extended into Wisconsin. By the time of the first European exploration, the Illinawek had been driven south of the Rock River and had concentrated along the Illinois River. These periods of expansion and withdrawal may be correlated with the archaeological division of Middle Mississippi into the Old Village and Trappist periods,[9] the Old Village being the earlier stage and including the Aztalan site in Wisconsin, the Trappist being later and including the majority of the sites along the Illinois River. The withdrawal from Wisconsin and northern Illinois was the result of increased pressure from the Sioux, the Sauk, and the Fox. This may have been a reflection of the development of Plains horse culture and the shifting in tribal locations which it brought about. The withdrawal of the Illinawek into central Illinois had been completed by about 1650. At this time, Illinawek culture was what is known archaeologically as the Trappist aspect of Middle Mississippi. In 1655 the Iroquois began

[9] Griffin, 1942.

a series of attacks which by 1667 had driven the Illinawek to and across the Mississippi River.[10] Here they were placed in close contact with Oneota culture borne by the Chiwere Sioux. At the same time, the southern bands of the Illinawek took refuge among the Quapaw and were in similar proximity to an Oneota group. At the same time, the Buzzard Cult was in its later stages and had spread north far enough to be taken up by the Quapaw and their Illinawek visitors. After the Iroquois withdrew in 1667 the Illinawek began to move back into the Illinois country, a movement which was under way when Marquette made his first journey through Illinois. The Crable site is one of the first settlements from this wave of repopulation. It must have been early, for though the quantity of trade material began to increase rapidly after this time, none has been found at Crable. Other sites in Illinois which show Oneota influence and which contain trade material are Illinawek sites of the period after 1700.

The writers would be the first to concede that the above reconstruction is highly tentative and doubtless wrong in some of its assumptions and conclusions. Nevertheless, it seems to be in accord with every type of evidence we can find and is offered as a working hypothesis for further elaboration and verification.

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[10] Alvord, 1920, p. 37.

NOMAD RAIDS AND FORTIFIED PUEBLOS

RALPH LINTON

NO ONE who has seen the fortified villages and inaccessible cliff dwellings of the Pueblo III period of Anasazi culture can fail to have been impressed by the amount of labor expended in their construction or by the inconvenience entailed in living in them. It is clear that they reflect an urgent need for defense; it is less clear against whom their builders had to defend themselves. Southwestern archaeologists have been prone to dismiss this problem with somewhat vague statements about nomad invasions which compelled the agricultural Anasazi to draw together into large groups and build strongholds. This theory was advanced very early in the history of Southwestern research, when most of our present information on this region was lacking, and it may be profitable to re-examine it at this time.

At the time that this theory was put forward, only two facts could be advanced in its support. Part of the earlier Anasazi territory had been occupied from the beginning of the historic period by the semi-nomadic Navaho, and both they and the Apache had raided the surviving pueblo communities from time to time. There was a complete lack of archaeological evidence either for or against the hypothesis, and one must conclude that it was advanced largely on the basis of Old World analogies. The role of the nomad in Eurasiatic history has been a dramatic one. Hanging on the borders of the agricultural areas, he has been a continual threat to his settled neighbors. Numerous, warlike, and highly mobile, the Old World nomad stood ready to raid or conquer the agriculturalists whenever their internal difficulties gave him an opening. Historians of the nineteenth century accepted nomad invasions as one of the basic patterns of history, and it is not surprising that they applied this pattern to the explanation of New World events without pausing to enquire whether its application was justified.

The relationship between nomads and settled peoples in the New World was not the same as the historic Eurasiatic one, but neither was it unique. It had an Old World parallel, but this lay on a time horizon of which the average historian was ignorant. The American nomad bore very much the same relation to his settled neighbors that the Paleolithic aborigines of Europe seem to have borne to the Neolithic invaders of that continent. He was vastly inferior to the agricultural groups with which he came in contact. In the absence of domestic animals which might provide a basis for a pastoral economy, he remained a simple food gatherer, subject to all the disabilities of that condition. All the informa-

tion which we have from regions other than the Southwest indicates that prior to the introduction of the horse, American nomads were impotent against settled agricultural groups. The assured food supply of the latter gave them an overwhelming superiority of numbers, while they were better organized and at least equally well armed and mobile. When agriculturalists and nomads met, the nomads were destroyed, were pushed back into territory unsuitable for agriculture, or became adjusted to a symbiotic and semi-dependent relation with their settled neighbors.

There seems no reason to assume that the situation in the Southwest during the Pueblo II and III periods was greatly different from that in other North American times and places where nomad and agriculturalist met. We may assume that there were nomads on the borders of the Anasazi territory, although archaeological proof for this is lacking. Climate and ecological factors seem to have been much the same as they are today. Bison never reached the high arid plateau in economically significant numbers, the supply of edible plants was small, and game was by no means plentiful. The regions in which nomad invasions might have originated were incapable of supporting more than a sparse population of seed gatherers and small-game hunters. Even this population must have been forced by the exigencies of its food supply to live in widely dispersed family groups like those of the historic Paiute and Shoshone. It is improbable that such food gatherers were warlike and still more improbable that they could have developed the sort of coordination and internal organization necessary to assemble and provision war parties of a size which would constitute a serious threat to most Pueblo III settlements. Thus the Mesa Verde, with its conservatively estimated population of 5000, should have been able to put 700–800 fighting men in the field. It seems unlikely that there were that many nomad warriors within a five hundred mile radius of the Mesa Verde, even though this settlement lay near the northern limit of the Anasazi territory.

It may be protested that the term nomad, as applied to these hypothetical invaders, must not be taken too literally. They may have been acquainted with some sort of rudimentary agriculture, like the historic Navaho and Apache. However, this hypothesis encounters certain difficulties. In their rapid spread and establishment during the time from Basketmaker III to Pueblo III, the northern and eastern extensions of the Anasazi seem to have reached almost to the limits of the territory suited for agriculture by primitive methods. If they had agricultural neighbors to the north or east, these neighbors were on marginal lands which could not have supported populations comparable in size to the Anasazi ones. It may be added that few indications of agricultural

groups which were contemporaneous with Pueblo II or III have so far come to light in these regions.

Even if the population to the north and east was somewhat larger than that which could have been supported by food gathering alone, it must have remained small in comparison with the dense Anasazi concentrations. It can scarcely have constituted a threat calling for construction of such elaborate defensive works. The tribes of the Lower Colorado were able to deal with the neighboring Apache quite successfully without resorting to anything of the sort. This fact has been recognized by some investigators, and the defensive works have been explained either as a result of extreme cowardice on the part of the presumably inoffensive and peace-loving Anasazi of the period or as a protection against incessant petty raids which were cumulative in their effect. The concept of the Anasazi as inoffensive and peace-loving seems to have been based partly on the Old World dichotomy of the unwarlike peasant *vs.* the warlike nomad. Actually, both the folklore of the Pueblo people and their behavior prior to the final Spanish conquest seem to indicate that they were well able to take care of themselves and quite ready to assume the offensive when occasion offered.

The idea that the defenses were made necessary by constant petty raids seems more probable, but again there are difficulties. Small groups living on a hand-to-mouth food-gathering basis cannot spare much time or man-power for raiding and certainly cannot indulge in it for sport or prestige. If they acquire raiding habits it is because they have discovered that raiding is safe and profitable. The essence of the Old World nomad raid was its swiftness in attack and retreat, made possible by the use of cavalry. The American nomad raider had to come and go on foot, and the Anasazi warriors, numerous and fresh from the village, must have been formidable in pursuit as well as in defense. That the nomads were able to wear down the Anasazi settlements and eventually to drive out their inhabitants by successive attacks is, under the circumstances, highly questionable.

Final solution of the problem of nomad invasion in the Southwest must depend upon further archaeological work, but the information which has been accumulating since the nomad theory was first advanced certainly does nothing to substantiate it. If nomad raids were frequent and serious, it stands to reason that at least some nomad warriors would have fallen before the walls of the fortress pueblos or been captured and done to death within them. As far as the writer can discover, no skeletal remains which would support the nomad invasion theory have so far come to light. There have been numerous finds of victims of violence, often interred with scant ceremony, but all of these have been of the

ordinary Anasazi physical type. Their presence suggests neighborhood brawls rather than foreign invasions.

Another aspect of the archaeological record is also pertinent to our problem. If nomads drove out the Pueblo III population from the northern parts of the Anasazi area, one might expect the victors to occupy the territory they had thus cleared and at least to camp in the comfortable quarters left by their predecessors. However, there seems to be no evidence that anything of the sort occurred. There is a hiatus in the archaeological record in this region extending from the abandonment of the northern pueblos to the appearance of the Navaho, whose earliest remains cannot be dated before the seventeenth century. This hiatus may be more apparent than real, but it is suggestive that it should still exist when so much work has been done in the area.

Any investigator who attacks a long-accepted theory should be willing to suggest an alternative. The cliff dwellings and fortified pueblos are mute witness that the Anasazi of the Pueblo III period considered themselves in serious danger. If we discard the nomad theory, the only logical explanation seems to be that these defenses were designed to protect the various Anasazi communities from each other. While we have no direct evidence on this point, we know that during the early historic period certain pueblos were wiped out by other pueblos, as in the case of Awatobi, destroyed by its close neighbors. The numerous evidences of trade within the Anasazi area during the Pueblo III period do not preclude the possibility of such attacks, since most tribal wars are intermittent. Moreover, in the archaeological and tree-ring records now available to us we can find abundant reason for intra-Anasazi warfare toward the close of Pueblo III. The rapid growth of population which took place in the area from Basketmaker III well into Pueblo III coupled, toward the end of that period, with soil exhaustion and recurrent droughts, must have resulted in bitter competition for any good agricultural land still available. This competition might be expected to be especially severe between adjoining communities, where land which had been seized could be exploited from the established pueblo. There must have been an increase in neighborhood wars, like that which later wiped out Awatobi, and such mass attacks may well have been preceded by years of bickering and reciprocal raids on crops. On the basis of this hypothesis, the existence of groups of close-lying, heavily fortified settlements like those of the Mesa Verde or the Chaco immediately becomes intelligible. The building of fortifications by one group would necessitate similar action by other groups, and the accumulation of defensive works may, perhaps, be interpreted as a sort of armament race undertaken both for immediate safety and in preparation for the

time when the communities would have to join battle for the dwindling fields on which their existence depended.

Of course no fortifications could protect the Anasazi from the cumulative effects of soil exhaustion or from the great drought of the late thirteenth century which seems to have forced their final withdrawal southward. That this withdrawal was followed by an immediate nomad occupation of the territory which they had abandoned seems improbable. The same conditions which made it untenable for the Anasazi would have made it untenable for less advanced agriculturalists. As regards simple food gatherers, the Anasazi themselves must have exploited the wild foods and hunted out the game rather thoroughly in their final lean years. It is more probable that there was a real hiatus in occupation, the region remaining uninhabited until it had had an opportunity to recover from the Anasazi exploitation.

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EXCAVATIONS AT VALSHNI VILLAGE, A SITE ON THE PAPAGO INDIAN RESERVATION[1]

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VALSHNI Village is a surface ruin fourteen miles southwest of Sells, Arizona, in the Sells District of the Papago Indian Reservation. The site is located on the adobe flats of the Baboquivari Valley near the confluence of the Valshni and Fresnal Washes. It is approximately ten miles north of the International Boundary and one-half mile east of the Papago village of Burro Pond. Its distinguishing features are five trash mounds above the desert level and many sherd concentrations.

Prior to 1938 no archaeological investigations had been carried on within the Papago Reservation other than surveys conducted by Gila Pueblo[2] and the Arizona State Museum. During the winter of 1938–39, the first excavation in the area was completed at the Jackrabbit ruin under the supervision of Frederick H. Scantling. This work served to define what was called the Sells phase, which has been placed at 1250–1400 A.D. and thus occupies a relatively late position in the local chronology.[3] Two prior phases were established at Valshni Village, the older of which has been called the Vamori phase and the younger the Topawa phase.[4] It is with these two earlier phases that this paper is concerned.

Valshni Village is situated in the middle of a broad flat covered with mesquite and creosote bush and is approximately 2300 feet above sea level. No vegetal matter was discovered during the excavations, but many plants were undoubtedly important to the occupants of the site. The location of Valshni Village was ideal for agriculture, yet evidence for a primarily agriculture economy is not strong; it is impossible to say to what extent these people depended on annual domestic crops.

The water supply must have been a constant problem to the prehistoric inhabitants of this region, just as it has been to the Papago during the modern period, for there is no evidence that any of the washes in the Baboquivari Valley have carried a permanent flow of water in recent times. Water may have been stored in reservoirs for use during

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[1] This site was excavated during the winter of 1939–40 by the second in a series of projects concerned with archaeological investigation on the Papago Indian Reservation. These projects have been under the joint supervision of the Arizona State Museum and the CCC-ID and were conducted with the approval of the U. S. Department of the Interior and the Papago Tribal Council. This excavation was under the direction of of Dr. Emil W. Haury and under the field supervision of the writer.

[2] Gladwin and Gladwin, 1929. [3] Scantling, 1940.

[4] These phases were named after the nearby Papago villages of Vamori and Topawa.

the dry season. Also, the people probably moved to permanent sources in the mountains when water was not available in the valleys.

Nothing was found which would indicate that these people had any system of irrigation, but, as these flats are flooded year after year, such evidence would be very difficult to obtain. At the present time, there are many nearby fields cultivated by the Papago, who practice flood-water farming during the summer rainy season, when the water is carried from the washes to the fields in irrigation ditches. Such a system could easily have been employed at Valshni Village in the same area that is now under cultivation. There was an apparent intensification of agriculture during the later Sells phase, which saw these people making use of large irrigation canals, inspired by a similar practice among their neighbors to the north, the Hohokam.

That these people were heavily dependent upon hunting is shown by the large quantity of animal bones found throughout the rubbish. The following have been identified: Arizona Whitetail deer (*Odocoileus couesi*), Mule or Blacktail deer (*Odocoileus hemionus*), Mountain sheep (*Ovis canadensis*), Antelope Jackrabbit (*Lepus alleni*), California Jackrabbit (*Lepus californicus*), Cottontail rabbit (*Sylvilagus*), Coyote (*Canis Latrans*), and Wildcat (*Lynx*).[5] What this list lacks in variety is made up in quantity, the deer bones being especially plentiful. Seventeen good specimens of mountain sheep horn were recovered, many on house floors and innumerable fragments all over the site. It is interesting to note that no evidence of mountain sheep is reported from Jackrabbit ruin. It is unlikely that there was any temporary shift in the range of these animals—they are found in the region today—but it seems probable that the added attention given to agriculture during the Sells phase resulted in a marked decrease in use of the animals hardest to procure.

THE SITE

The main part of the site covered an area roughly 275 by 200 m. Its only visible features were five trash mounds, sherd concentrations, and a few pieces of chipped and ground stone. With no surface clues to show the way, general systematized testing had to be employed throughout the area of occupation. A system of coordinates which crossed at thirty-meter intervals was used, and in the blocks thus formed test trenches, dug five meters apart, were carried the full length of each block. The fill which had accumulated since the time of occupation averaged about forty centimeters in depth.

The rubbish mounds offered the only good chance for stratigraphy, for, although sheet rubbish was deposited over the entire site, it was

[5] Identified by Dr. W. H. Burt, Museum of Zoology, University of Michigan.

too thinly spread and too mixed to be of much help. No rubbish pits were found. The average height of the four main mounds was 1.5 m., and their average width was 22 m. The terrain was almost flat, so these mounds were not complicated. Erosion had had little effect on them, but rodents had burrowed extensively in the soft material. The four large mounds were tested stratigraphically, and a good sample of the pottery was obtained from the smaller fifth mound.

The proper wood for tree-ring dating was lacking at Valshni Village. Hence, the establishment of a time relationship between the occupation here and neighboring cultures required dating by means of intrusive pottery, the most useful of which was the red-on-buff pottery made in the Gila Basin area by the Hohokam.[6]

The results obtained from the four main mounds were in themselves disappointing. However, they did bring to light the fact that the chief chronological and developmental differences in the rubbish occurred between the mounds rather than within them. Associations with the Gila Basin pottery lend a significance in time to these developments.

The homogeneous nature of the material from each of the mounds showed that each mound represented a relatively short span in the total period of occupation. Mounds 1 and 2, on the east side of the site, represented the earliest period of habitation, Mound 3 a middle period, and Mound 4, to the west, the latest. The Gila Basin intrusive decorated pottery as it was associated with these four mounds is as follows:

Mound 1: Late Santa Cruz Red-on-buff and early Sacaton Red-on-buff.
Mound 2: Late Santa Cruz Red-on-buff and early Sacaton Red-on-buff.
Mound 3: Sacaton Red-on-buff.
Mound 4: Late Sacaton Red-on-buff and Casa Grande Red-on-buff.

From Mounds 1, 2, and 3 a gradual increase can be traced in the local redware (Valshni Red). This coincides with a development and increase in the local decorated type (Vamori Red-on-brown). It is between Mounds 3 and 4 that the most noticeable break occurs. In Mound 4 there is a marked increase in the redware and a decided decrease in both local and intrusive decorated types. What little local decorated pottery (Topawa Red-on-brown) was found here was quite distinct from that of Mounds 1, 2, and 3. Mounds 1, 2, and 3 encompassed the development from early to late of the Vamori phase, placed at 800–1100 A.D. It is probable that at least portions of Mounds 1 and 2 represent the very end of an earlier phase. However, the evidence was insufficient to establish such a phase and to differentiate between it and the Vamori

[6] Gladwin, Haury, Sayles, and Gladwin, 1937.

phase. Even so, the establishment of such a phase is of no great importance to the present paper, as the period from 800 to 1100 A.D. was one of continuous occupation and development on the site. The Topawa phase, placed at 1100–1250 A.D., is represented by Mound 4.

Following the Topawa phase is the last defined phase in the prehistory of the area. This is the Sells phase, placed at 1250–1400 A.D., which, though not occurring at Valshni Village, seems nevertheless a direct development from the Topawa phase. It was during this phase that the local culture reached its peak. The Sells phase saw the local redware reach its full development in the distinctive Sells Red type. Other traits which distinguish the Sells phase are rectangular surface houses with no entrance passage, burial by inhumation with rocks covering bodies, Tanque Verde Red-on-brown pottery (Sells variety), an abundance of grinding stones, overhanging end manos, grooved pestles, loaf-shaped arrow-shaft polishers, polished fleshing knives, grooved mauls, flake choppers, and polished red pottery spindle whorls.[7]

Very little is known about the archaeology of the region in the period from 1400 to 1700 A.D., following the Sells phase, although at the present time work is being carried on which, it is hoped, will throw some light on this, the Recent period. The Modern period, from 1700 A.D. to the present, covers the known occupation by the Papago Indians.

Valshni Village, although occupied for a long time, probably never supported more than a few families at any given period in its history. Small, scattered villages have, it seems, always been characteristic of the region, their size being dictated by the limited amount of food and water available nearby.[8] The heaviest occupation, as shown by the rubbish accumulations and house remains, was in the Vamori phase, on the eastern portion of the site. The later inhabitants moved farther and farther west and became progressively fewer in number until, during the latter part of the Topawa phase, probably not more than one or two families resided here.

HOUSE REMAINS

In all, twenty-eight houses were uncovered. Due to the location of the village on the flood plain of the Valshni Wash, considerable erosion had taken place, and only twelve had enough of the floors preserved to indicate the original outline. The only floors whose edges and post-hole arrangements could be traced with any degree of ac-

[7] Scantling, 1939, p. 12.

[8] When the Apache raids rose to their height during the last century, the Papago were forced to band together into a few large communities for a short period, but they rapidly dispersed when the danger lessened.

curacy were those which had been heavily burned, and most of these were considerably broken up around the edges. In every instance but one, the houses had been constructed on the old surface level or excavated only a few centimeters.

Each house was identified as to phase by the pottery which occurred within ten centimeters of the floor. Sherds were often scarce, and the allocation of each house to the proper phase was sometimes doubtful. Other cultural material was of no aid, as a characteristic of all the houses was their almost complete barrenness of specimens other than pottery. Either the majority of the household equipment was of a perishable nature or else the houses were cleaned out before abandonment.

No good stratigraphy was found in any of the houses, but two of them could be definitely assigned to the Vamori phase or to an earlier period, as Vamori phase trash mounds had grown over them. A total of eighteen houses were identified with the Vamori phase, and these would indicate that there was no definite plan for the phase as now defined. In outline they ranged from roughly oval to rectangular with rounded corners. They ranged in length from 6.20 to 8.40 m. and in width from 3.60 to 5.40 m., excluding the entrance passage. The covered entrances were typically oval and resembled those of the Sacaton phase at Snaketown.[9] One house, rectangular with rounded corners, had a short, straight-sided entrance passage reminiscent of the Santa Cruz phase in the Gila Basin.[10] Two Vamori phase houses had stepped entrance passages. One had a high step, the house having been excavated 36 cm. below the old surface. The other step was only 13 cm. high, the house having been dug to this depth. Both steps had a log sill, and in the deeper one a groove ran the width of the entrance just outside of the step. Both of these features were common in the Sacaton phase at Snaketown.[11] Well-preserved fire pits were found in the majority of the houses, but a few had only a fire area. The fire pit was invariably in the center of the long axis of the house and offset toward the entrance.

Seven houses were assigned to the Topawa phase, but of these, only three showed the outline of the floor to any extent. The rectangular house with rounded corners continued into this phase, but no examples of the more oval type were found. All of those found possessed the oval type of covered entrance passage. Two examples of a house type peculiar to the Topawa phase were discovered. These were rectangular houses with rounded corners and bulbous entrance passages like, but larger than, the others. In length they ranged from 9.20 to 10.5 m. and in width from 5.85 to 6.10 m.

[9] Gladwin, Haury, Sayles, and Gladwin, 1937, pp. 61–67.
[10] *Ibid.*, pp. 68–71. [11] *Ibid.*, p. 61.

Post holes were, on the whole, unsatisfactory, no house showing a complete arrangement. There seems to have been no definite plan which was followed in every house. Major supports were usually set near each corner, and others might be set near the ends of the house, if its width required them. Other supports were found near the centers of the larger houses. One support was placed on each side of the entrance where it joined the main floor area. The roofs were probably flat, with the large rafters covered with smaller sticks and brush. About ten centimeters of earth served as a capping material. No secondary post holes were found outside of the actual floor areas, but they were perhaps there originally. In a few cases, post holes were found at the extreme edges of the floor, indicating that some use was made of roof supports incorporated in the walls. Secondary roof supports were plentifully used within the houses, probably put in as demanded by what must have been continually sagging roofs.

Floors were usually made of a clay mixture. Occasionally pits were found sunken below the floors. The trend in fire pits was from a deep basin with steep sides and a raised and rounded edge (Vamori phase) to a shallower one with gently sloping sides and a sharp, unraised edge (Topawa phase).

Several places were found which suggested covered areas other than houses. Some were contiguous to recognized dwellings, while others seem to have been roofed units unto themselves. These are suggestive of the *ramadas* used in the area today. The floor of one was thickly covered with broken jars, while on the floor of another lay three pairs and seven single mountain sheep horns, representing at least seven animals. Except for these small areas, there was no evidence that any of the structures on the site were used for anything other than dwellings. There is a possibility that the two larger structures assigned to the Topawa phase may have served as meeting houses of some sort.

Every house but two on the site was oriented with the entrance toward the east. Of the two exceptions, one faced north, the other south. There was nothing to indicate any preconceived plan for defense or any other purpose in the location of the houses.

These houses were single-unit structures built on or near the surface, with a covered entrance passage extending out from the center of the long side, a basin-shaped fire pit located near the entrance, a roof supported by timbers and covered with smaller timbers and earth, and walls probably of ocotilla stalks or sahuaro ribs covered with mud. Many houses of the Vamori phase are suggestive of the houses of the Sacaton phase at Snaketown. However, they differ in that they have no groove or sill around the periphery, they are surface structures, and their fire pits, though similar, are not identical. These houses have closer

analogies with Woodward's Type A house at the Grewe site, which was a surface structure and only occasionally had the sill.[12] The floor plan of this Type A house is similar to that of many of the Vamori phase houses. So the houses of both phases conform in many respects to the Hohokam type, and the variations are minor.

The development seems to have been toward a more rectangular house in the Topawa phase, with some of the houses becoming larger, but representing a direct continuation of the Vamori phase type. However, the architecture of the Topawa phase as seen at Valshni Village does not foretell that of the Sells phase. Generally speaking, the houses of the Sells phase were more like those of the Vamori phase, with parallel sides, rounded corners, and partially rounded ends. The fire pits, too, were similar to those of the Vamori phase. The only important difference was that the houses of the Sells phase had lost the covered entrance passage. But, as only two well-defined houses have been identified for the Sells phase and only three for the Topawa phase, it is probable that houses will be uncovered in further excavations which will serve to tie the two phases more closely together in this respect.

HEARTHS

Several outdoor cooking hearths were found. All were basin-shaped and varied in diameter from 70 to 150 cm. and in depth from 10 to 25 cm. below the old surface. In every case these were filled with burned rocks and charcoal, and in some instances they held profuse quantities of charred animal bones. Very few fragments of grinding tools were found in these hearths, although such fragments occur in great numbers in similar hearths of the Sells phase and in other regions of the Southwest. Their scarcity here is due to the paucity of such tools on the site and not to any prejudice against the use of such fragments in hearths.

DISPOSAL OF THE DEAD

Only one burial was discovered during the excavation of Valshni Village. This was located beneath the center of Mound 3. The body was three-quarters flexed and had been wrapped for burial in a reed mat. From its position under the mound it can safely be assumed to belong to the early occupation of the site. Inhumation has been established as the method for disposing of the dead in the Sells phase.[13] The Papago in modern times have buried their dead in isolated cemeteries, often some distance from the villages. It is possible that this practice has existed in the area at least since the Vamori phase; if this is so, it would account for the lack of burials within the prehistoric villages.

No evidence that the residents of this region ever practiced crema-

[12] Woodward, 1931, p. 10. [13] Scantling, 1940, p. 25.

tion during any of the three established phases has come to light. To the north and east, the Hohokam cremated, while the people of the Trincheras area practiced both cremation and inhumation at the large eroded site at La Playa, Sonora.

POTTERY

The three wares which make up the ceramic complex of Valshni Village are plain, red, and red-on-brown. The paddle and anvil technique was used in the manufacture of all three. The plain ware which occurred in both the Vamori and Topawa phases was the same as that of the Sells phase and has been designated by Scantling as Sells Plain.[14] This was a brown ware with a coarse paste, which occurred most frequently in a large, wide-mouthed jar form, but was also found in smaller jars of the same shape, and in hemispherical bowls. In the Vamori phase, a few vessels showed incising on the rims and, more rarely, a crude design incised on the upper body. Sells Plain was the oldest of the known types to have been made in the area.

Valshni Red also occurred in both the Vamori and Topawa phases. This was a well-polished red ware usually found in bowl form. It was the lineal predecessor of the later Sells Red and is distinguished from this type by its lack of a carbon streak and thickened rim and by other minor features. The red ware in this region became steadily more popular as time went on. In the Vamori phase it constituted 1.6 per cent of all the pottery, in the Topawa phase 22 per cent, and in the Sells phase 55 per cent. A corresponding drop in the plain ware may be correlated with this rise. Where the people of the Vamori phase (or the pre-Vamori phase) obtained the stimulus to make this red ware is not known. The immediate areas to the west and north had no red ware at this time, and it is unlike the San Francisco Red of the Mogollon area to the east. On typological grounds, Valshni Red has its most likely relative in a red ware collected along the lower reaches of the Mayo River, a ware for which a Southwestern affiliation has already been suggested.[15] This type unfortunately is unplaced in time. The region to the south has long been a stronghold of red ware, and Valshni Red will probably be traced in this direction.

The Vamori phase saw what was probably the inception of decorated pottery made in this district with the appearance of Vamori Red-on-brown. This type was nothing more than Sells Plain with the addition of a reddish-brown paint. Designs made up of simple geometric motifs were confined to a band around bowl interiors. Jars were rare,

[14] *Ibid.*, p. 33.

[15] Ekholm, 1940, pp. 325–326.

but they had a similar band of decoration around the body. The paint was poorly mixed, and examples show a marked unsureness in the layout and application of the design. Vamori Red-on-brown has some analogies with Trincheras Purple-on-red and perhaps even more with certain types found in the Colorado River district to the west, but so far these remain only analogies.

PERIOD	PHASE	POTTERY	TYPES
1400 A.D.			
Classic	Sells 1250–1400	Indigenous	Sells Plain Sells Red Tanque Verde Red-on-brown
		Intrusive	Casa Grande Red-on-buff Gila Polychrome
	Topawa 1100–1250	Indigenous	Sells Plain Valshni Red Topawa Red-on-brown
		Intrusive	Casa Grande Red-on-buff Sacaton Red-on-buff Trincheras Purple-on-red
1100 A.D.			
Sedentary	Vamori 800–1100	Indigenous	Sells Plain Valshni Red Vamori Red-on-brown
		Intrusive	Santa Cruz Red-on-buff Sacaton Red-on-buff Trincheras Purple-on-red Trincheras Polychrome Altar Polychrome
800 A.D.			

The pottery types associated with the phases found in the southern part of the Papago Indian Reservation, Arizona.

Stemming from Vamori Red-on-brown and showing for the first time influences from the Tucson area to the east, a new type of decorated ware appeared at the beginning of the Topawa phase. This has been called Topawa Red-on-brown. Polishing, previously used only on the redware, was now applied to this type. The main field of decoration

remained a wide band of rectilinear motifs on the bowl interiors, but frequent use was made of a narrower band, usually containing some variation of a chevron pattern, on the exteriors. The paint mixture and the application of the design showed great improvement, while the designs themselves reflect a sophistication never achieved in Vamori Red-on-brown. Topawa Red-on-brown is easily distinguished from the Tanque Verde Red-on-brown of the Sells phase by differences in design and finish, and by the fact that the main field of decoration in Tanque Verde Red-on-brown was transferred to the bowl exteriors. None of these decorated types was ever made in any abundance.

As indicated before, intrusive Hohokam red-on-buff types occurred with some abundance at Valshni Village and were of great use in dating the phases of its occupation. Another group of less well-known intrusive decorated types was also well represented on the site. These belonged to the Trincheras culture of northern Sonora,[16] and, while all but one have been reported before, more light was thrown upon the dating of these types at Valshni Village than has heretofore been possible. Examples of Trincheras pottery have been decidedly rare in the Hohokam sites of southern Arizona. Nor is Hohokam pottery frequent in the Trincheras sites. Yet both occur at Valshni Village. It would seem almost as though the inhabitants of the southern part of the Papago Reservation formed a buffer group between two larger populations who were mutually antagonistic. The idea that the Hohokam and Trincheras peoples were not friendly has already been advanced by Brand to explain the lack of trade between them.[17]

The three types from the Trincheras series which were found at Valshni Village were Trincheras Purple-on-red, Trincheras Polychrome, and a new type named Altar Polychrome. Trincheras Purple-on-red occurred most strongly in the Vamori phase but had minor Topawa phase associations. It has not been found on any site occupied during the Sells phase. This would give it a known time range approximately from 800 to 1200 A.D., with a noticeable dwindling toward the end of this period. The top date of 1200 A.D. for this type is probably accurate. However, the date of 800 A.D. is not meant to imply the initial date for the type, but only that it was being manufactured at that time. There were two varieties of this type, distinguished partly by the fact that the paint of one contained specular iron and that of the other did not.

Trincheras Polychrome (orange-red exterior; black and red, usually in alternating bands, on a white interior) was associated at Valshni Village with the earlier years of the Vamori phase. On the basis of this and other associations in southern Arizona it may be said to have

[16] Sauer and Brand, 1931. [17] Brand, 1935, p. 300.

been contemporaneous with the Santa Cruz phase of the Hohokam (700–900 A.D.). This type may possibly have existed even earlier than the first date, but it probably extended no later than the second.

Altar Polychrome is a type which, though collected from a number of sites in the Trincheras area, has never, to the writer's knowledge, been described. Its basic color is brown, and the decoration is applied with light red and black paint. Two different designs were most often used, with variations and combinations of each: alternating broad lines of black and red with a space between, or cross-hatched diamonds in black bordered by red lines. Jar forms are heavily predominant, and bowls, while they occur, are rare. Altar Polychrome follows closely the Trincheras ceramic tradition and, except for the addition of red paint, is much like the variety of Trincheras Purple-on-red which lacks the specular iron paint. Altar Polychrome was found only in Mounds 1 and 2, so an end date of between 900 and 1000 A.D. may be assigned to it. It may extend well back into the Trincheras chronology, but this will be established only by work in its native area.

The apparent cessation of the manufacture of polychrome types shortly after 900 A.D., followed in a few years by a dwindling of the purple-on-red type, may indicate the full development of the Trincheras culture at an earlier date than has previously been supposed.

One black-on-white sherd was found with a Topawa phase association. It has been identified as either Mesa Verde Black-on-white or a hybrid of Sosi Black-on-white and Dogoszhi Black-on-white.[18] Mesa Verde Black-on-white has been placed as early as 1200 A.D.,[19] Sosi Black-on-white from about 1120 to 1150 A.D.,[20] and Dogoszhi Black-on-white continued until 1150 A.D.[21] In a general way, then, this sherd provides something of a check on the dating of the Topawa phase.

A number of sherds were found which had been worked into disk form. Some were perforated, some not. Those without perforations were distributed through both phases, while most of the perforated specimens belonged to the Topawa phase. Many of the perforated disks could have been used as spindle whorls, while those lacking the perforation were probably counters used in some game[22] or ceremony.[23] One molded spindle whorl, conical in shape and made of polished redware, was found associated with the Topawa phase. These were common in the Sells phase.

[18] Identified by Dr. H. S. Colton, Museum of Northern Arizona.

[19] Colton and Hargrave, 1937, p. 231. [20] *Ibid.*, p. 211.

[21] *Ibid.*, p. 209. [22] Gladwin, Haury, Sayles, and Gladwin, 1937, p. 243.

[23] In a cave near Willcox, Arizona, which had been used as a shrine, a number of these perforated pottery discs were found bound together in pairs. Fulton, 1941, p. 24.

STONE WORK

Worked stone was not common at Valshni Village. Only three examples of metates were found, one complete and two fragmentary. These exemplified a shallow basin-shaped type and a thick slab type. No trough metates were discovered, but several manos were found which had been made for use with this type. In general, two types of manos appeared on the site. The first was nothing more than a water-worn boulder ground down by rubbing. The second was well formed, rectangular in outline, loaf-shaped in cross section, and made for a trough metate. Bifaced examples of both types, especially the former, were relatively common. Rubbing stones, hammerstones, short pestles, and one ground blade occurred. Three fragmentary axes were found; by combining the characteristics of all three it became apparent that the typical axe was single-bitted, three-quarter grooved and had a head which was used as a maul. Abrading tools included whetstones and reamers, neither of which have been reported from the Sells phase.

Probably intrusive from the Hohokam area were a small sandstone bowl and a small effigy palette in the shape of what probably was a frog. This latter specimen had a palette, never used, outlined on the top and a small mortar which showed considerable use on the smoothed under side. A stone ring of lava, a small perforated and incised stone disk, and beads of steatite and turquoise were among other objects recovered. One fragment of a mosaic plaque was identified with a house assigned to the Vamori phase. The upper surface had a beveled edge covered with a paint cloissone decoration,[24] while the bottom was flat and similarly decorated. This plaque, is like the later type found at Snaketown.[25] It was undoubtedly foreign to Valshni Village.

Projectile and drill points were, on the whole, like those of the Hohokam. A few of the former were serrated and a few were side-notched. The bases were stemmed, concave, or flat. They were rare, and probably wooden points were prevalent. A flake scraper, a few knives and flake blades completed the chipped-stone material.

None of the stone work mentioned above occurred with any frequency, and this general scarcity was a marked characteristic of Valshni Village. Most of the types which were found had associations with both the Vamori and Topawa phases and agree on the whole with similar artifacts of the Sells phase. During the Sells phase, however, a great increase in the stone industry took place, apparently stimulated by some force from the south.[26] The worked-stone complex at Valshni

[24] For a discussion of the characteristics and distribution of this decorative technique, see Ekholm, 1942, pp. 93–95.

[25] Gladwin, Haury, Sayles, and Gladwin, 1937, Plate CX. [26] Scantling, 1940.

Village, particularly in the grinding-stone category, stands in contrast to that of the Hohokam, who at this time were carrying on a prolific grinding-stone industry. This is probably explained by a greater emphasis placed on hunting by the people of Valshni Village and by their possible use of wooden implements.

BONE AND SHELL

Worked bone, like stone, was scarce and consisted only of a few awls. These were of two types, split bone awls[27] and splinter awls.[28] Both occurred in the Vamori and Topawa phases, and both continued into the Sells phase.

In proportion to other objects, worked shell was rather abundant. These people had easy access to the Gulf of California and took advantage of this fact to bring in many shells for ornamental purposes. Among other things, disks and tubular beads, pendants of whole and cut shell, bracelets, rings, and plain disks were found. One bracelet and several fragments showed incised patterns. Several of the pieces of cut shell had been worked into animal and bird forms, and the workmanship on these conforms so closely to the style of the Gila Basin branch of the Hohokam that they probably were intrusive from that area. These ornaments occurred in both phases on the site but were more frequent in the Vamori phase. This shell work at Valshni Village appears in distinct contrast to that of the Sells phase, where no carved or incised shell was found and ornaments of any type were rare.[29]

SUMMARY AND CONCLUSIONS

Although much work remains to be done, it can be said that the prehistoric culture in the southern part of the Papago Indian Reservation, though augmented from time to time by outside influences, represents a continuous local development from the Vamori phase through the Sells phase, or from about 800 to 1400 A.D. The Vamori phase (800–1200 A.D.) shows the longest occupation at Valshni Village. In this phase are found the traits which seem to be basic in the old culture of the region, together with a few foreign ones which had been taken over locally. The Topawa phase (1100–1250 A.D.) was a time of transition. Influences from the outside were more strongly felt, and the painted pottery reflects increased contact with the Tucson area to the east. During these two phases the local population apparently formed a recipient group, and objects of their material culture are rarely found (or recognized) on sites in the surrounding areas. Yet that they carried on a brisk trade

[27] Kidder, 1932, p. 211. [28] *Ibid.*, p. 213.
[29] Scantling, 1940, pp. 58–60.

with these areas is shown by the intrusive material at Valshni Village. What they used as a basis for this trade is not known. Possibly it was shells and salt from the Gulf of California. In the Sells phase (1250–1400 A.D.) there was an increase in all types of ground stone implements, especially milling stones; a great increase in red ware; the initial use of irrigation canals and earth enclosures; and an increase in the size of the villages. The intensification of old techniques and the introduction of new ones resulted in a shift of emphasis from hunting to agriculture. In this phase the highest development of local culture took place, and local products, notably Sells Red pottery, were widely traded.

The occupation of Valshni Village has been placed at 800–1250 A.D. This assignment of time has been made almost wholly on the basis of the red-on-buff pottery intrusive from the Gila Basin area to the north, as this is the only bordering area for which a chronology of a comparable period has been worked out. The fact that the red-on-buff pottery types in Mounds 1 and 2 were so mixed that they defied a chronological separation leads to the conclusion that Valshni Village was first occupied at the time the Hohokam in the Gila Basin were going through the gradual change from the Santa Cruz phase to the Sacaton phase. The Topawa phase occupation has been placed at 1100–1250 A.D. on the basis of the presence of a late variety of Sacaton Red-on-buff, which could be assigned to the Santan phase of the Hohokam[30] and of Casa Grande Red-on-buff.

Many traits of the Vamori and Topawa phases fit into the general pattern of the Hohokam, and others deviate from it only slightly. Most of the divergences and the absence of traits in one group or the other can perhaps be explained by environmental differences. In only two important traits were the people of Valshni Village greatly at variance with the Hohokam—burial by inhumation and decorated pottery. The one burial on the site is scant evidence for the assumption that inhumation was the exclusive method, yet, since no cremated bones have been found, this assumption is probably correct. But the fact that the people of Valshni Village did not practice cremation does not automatically negate the possibility of their relationship to the Hohokam. Of the decorated pottery, the type which bears little resemblance to any Hohokam type is Vamori Red-on-brown, which was probably the first decorated ware made in the region. The stimulus for this must have come from the south or west. Certainly the material culture of Valshni Village shows a closer parallelism to that of the Hohokam than to that of any of the other defined neighboring groups. If these people were a

[30] Schroeder, 1940, p. 145.

desert branch of the River Hohokam, one would expect to find alien traits taken over from other nearby populations.

The extent of the culture as seen at Valshni Village was, so far as is known, confined to the southern part of the present Papago Indian Reservation. It is possible that the pre-Vamori phase people ranged over a somewhat wider area and were pushed by the expansion of more prolific surrounding cultures into this undesirable region, where they continued the development of their own colorless culture while devoting most of their energies to extracting a living from their environment.

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ARCHAEOLOGICAL WORK IN MANCOS CANYON, COLORADO[1]

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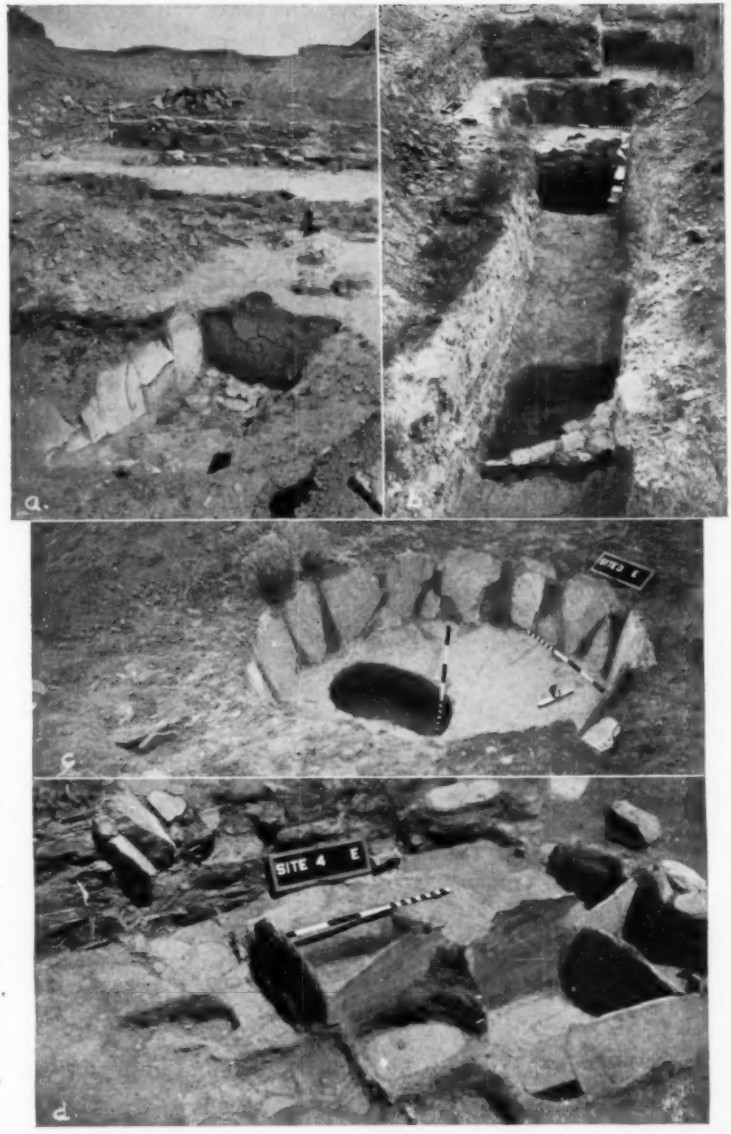
IN APRIL, May, and June of 1942, salvage excavations were performed under permit from the Secretary of the Interior at five ruins damaged by road construction in lower Mancos Canyon, on the Ute Indian Reservation in southwesternmost Colorado, just south of the Mesa Verde, in Montezuma County. Twenty-four other open sites in the same section of the canyon were surveyed. Cliff dwellings and other sites in side canyons or on mesas were not included. The excavations were carried out for the Indian Service under an interbureau agreement between the National Park Service and the Office of Indian Affairs for cooperation on protection and salvage of archaeological remains along Indian Service road locations. Park Service and Indian Service officials concerned were most cooperative; the four Utes who worked throughout the job, as well as most of the additional Utes and Navahos who were on the job less steadily, proved excellent workmen. Special mention must be made of the extensive help afforded by the Laboratory of Anthropology, Inc., at Santa Fe, through its curator, Mr. Stanley Stubbs. A report on the human skeletal material has been prepared by Dr. T. D. Stewart of the National Museum, and a report on the ethnobotanical specimens by Volney H. Jones of the University of Michigan. Faunal remains and charcoal fragments were sent to appropriate specialists for study. A fully detailed final report is in preparation.

Site 1, on a low rise in the first large rincon on the north side of the canyon, proved to be a very small pueblo of perhaps twelve rooms, of which only three were excavated. In the plaza, there was a deep kiva, presumably of Mesa Verde type, which was located but not excavated. Also associated with the pueblo were two rectangular slab-lined vaults, possibly outdoor cooking pits, each approximately 5 feet long and 2½ feet wide, whose bottoms were covered with sooted large pebbles. Mr. Kenneth Ross, of Mesa Verde National Park, suggests on the basis of similar structures, not connected with pueblos, which he excavated in the Ackmen district, fifty miles to the north, that these vaults were for firing pottery. This is quite possible, though the Mancos Canyon examples show no evidence of intense heat, which would have fractured the sandstone slabs. Four disturbed infant burials and various specimens were found in the refuse; they appear, combined with others from contemporaneous sites, in the tabulation below.

[1] Published with the permission of the Director, National Park Service.



Sites in Mancos Canyon, Colorado. *a*, Site 1 (Mancos Black-on-white), slab-lined vault and pueblo rooms; *b*, Site 3, northwest pilaster of Mesa Verde kiva in foreground, south recess in middleground, Basketmaker pit room at end of trench; *c*, Site 3, slab-lined circular Basketmaker structure showing burial pit in floor; *d*, Site 4, basins and bins on floor of room of Mancos-Mesa Verde pueblo.

Sites in Mancos Canyon, Colorado. *a*, Site 7, intramural kiva and adjacent room with floor pits; *b*, Site 3, Basketmaker pit room at left cut by south recess of kiva at right. Note extension of kiva bench in front of southwest pilaster; *c*, Site 3, floor of Basketmaker pit room cut by ventilator of Mesa Verde kiva.

The pottery of Site 1 consists mainly of Mancos Black-on-white (about 3,000 sherds; three whole or restorable vessels) and variously indented corrugated ware (2,700 sherds; one complete jar). There are forty-five sherds of "McElmo" or Mesa Verde Black-on-white, found mainly in the pueblo and in the top twelve inches of the refuse. The majority of the painted ware corresponds closely to Mancos Black-on-white as defined,[2] although it is extremely variable. It seems to be invariably sherd-tempered. Four styles of design include nearly all of it: heavy solid elements, mostly triangles; hatch-filled bands; rectilinear all-over patterns, and arrangements of lines and dots. The utility ware includes flat-wavy and medium-wavy,[3] exuberant,[4] and various other styles of corrugation. Stratigraphic work indicated an increase in typical medium-wavy and wedge-point and a decrease in clapboard and in general variability. The corrugated ware is tempered with crushed igneous rock.

Holdovers from earlier periods—sherds scattered at random from top to bottom in the refuse, hence not representing separate components or antecedent occupations—include banded necks (fourteen, plus an uncertain member of the clapboard and plain sherds), corrugated necks (fourteen, plus some of the corrugated and plain sherds), plain gray (492 sherds, many undoubtedly from coiled-neck pitchers but some neck and rim sherds, definitely "Lino"), and a few sherds of iron-paint Pueblo I black-on-white and Basketmaker III black-on-gray.

Intrusive (trade) pottery comprises five distinct groups, each representing a distinct ware. The first is black-on-white and includes a few sherds, probably true Chaco 2 rather than Mancos, and a pitcher, definitely Chaco 3, from on and near the surface. Chaco 3 is considered a twelfth-century type, perhaps dating from 1100–1130.

The second group consists of eight sherds of Wingate Black-on-red[5] bowls, one sherd of a Wingate jar, and a sherd of polished corrugated brown not referable to any published type but obviously coming from the general region of the Mogollon Rim.

The third group of intrusive wares includes mainly sherds representing the several roughly contemporaneous types of Pueblo I orangeware of the western San Juan—Abajo Red-on-orange, La Plata Black-on-orange, Bluff Black-on-red, and *affinis* Deadmans Black-on-red. These are presumably quite early in the occupation or else are holdovers; the lag between cessation of manufacture of a type and of breakage perhaps being greater in the case of colorful imported pieces. There are also four

[2] Martin, 1936, pp. 80–94.
[3] Martin, 1938, p. 270.
[4] Roberts, 1935, p. 13.
[5] Colton and Hargrave, 1937, pp. 122–123.

bowl sherds and a restorable dipper of Tusayan Black-on-red, the Pueblo II (900–1100) development out of the group just mentioned, and three sherds, one from the surface, one from the upper three inches of the refuse, and the other unplaced, of Citadel Polychrome, the next development of the western San Juan orangeware, dated in the first half of the twelfth century.[6]

There is one sherd of Sosi Black-on-white from northern Arizona, also dated in the early twelfth century.

The fifth group is represented by a portion of a vessel closely resembling Winona Brown, an eleventh century type of the Flagstaff area.[7]

Site 3, in the open flat 1½ miles up the canyon from Site 1, consisted of two quite distinct components. Excavated structures of the earlier, Basketmaker III, occupation included a portion of a pit house, cut through by a later structure, and two slab-lined storage chambers, one oval, about 12 feet in maximum diameter, the other circular, 7 feet in diameter at the floor and 8 feet in diameter at the tops of the slanting 2-foot slabs of sandstone.

The later occupation included a very small pueblo of the Mesa Verde horizon (Pueblo III), consisting of a row of three little, contiguous, rectangular, masonry rooms with a patio or plaza; a typical, large, deep kiva on the south; and a thin refuse accumulation south of the kiva.

No burials and very few specimens were found in the late occupation. In the early component, a single burial without offerings, an undeformed dolichocephalic adult female,[8] was found semi-flexed on the right side in a pit in the floor of the circular slab structure and covered with heaped-in slabs. Of the few specimens associated with the Basketmaker III occupation, the most interesting is a straight tubular pipe of brown pottery still containing a cake very reminiscent of Granger Rough Cut. According to Voleny H. Jones of the Ethnobotanical Laboratory of the University of Michigan, there is unfortunately very little hope of successful analysis of such dottles.

Only the south recess of the deep kiva was excavated; the opposite wall was located at its northwest pilaster. It is clearly of the six-pilaster Mesa Verde "keyhole" type, about 13 feet in diameter. The construction of the kiva had evidently destroyed the main portion of a Basketmaker III pit house. A slab-and-plaster-walled room which had been cut by the south recess and ventilator of the kiva appears to be an antechamber, lacking floor features except for four corner posts, and lacking an en-

[6] *Ibid.*, p. 75. [7] *Ibid.*, p. 162; McGregor, 1941.

[8] Report of Dr. T. D. Stewart on skeletal material from these excavations, July, 1942.

trance or ventilator of its own in its undisturbed and continuous south wall. This pit room is squarish with rounded corners; it is about 8 feet in each maximum diameter.

The pottery of the little pueblo and the refuse consists of classic Mesa Verde Black-on-white and three closely related varieties of highly standardized indented-corrugated ware, with neatly-made small indentations. Holdovers (Mancos and Pueblo I black-on-white types, corrugated ware similar to that of Site 1, and coil-neck gray) are very scarce, and intrusives are absent, as in the Mesa Verde period on the La Plata.[9]

The reality of "McElmo Black-on-white," as vaguely defined by the literature on southwestern Colorado[10]—not as the term is used in University of New Mexico publications, where it is approximately or partially synonymous with Mancos Black-on-white[11]—seems questionable. Sherds typologically intermediate between Mancos and Mesa Verde (in fact, a series of several hypothetically successive groups) can readily be sorted out, but there seems to be little evidence that they are intermediate in time. Most of this material is probably inferior Mesa Verde, made during the same period as the classic form. Certain criteria of Mesa Verde pottery do appear in the Mancos stage, but do not seem to constitute a definite separate horizon.[12]

The pottery of the early component includes 144 sherds and a restorable jar of plainware, classifiable roughly as "*affinis* Lino gray," and twenty sherds and a restorable bowl of iron-paint black-on-gray (La Plata Black-on-white) with fugitive red bowl exterior. The jar sherds include some with fugitive red, but many seem never to have been so treated. There is one undecorated sherd of orange ware from the pit room.

Plain gray pottery of this period varies greatly, but to avoid overcomplication it is probably desirable to group it, though the rock-temper precludes use of the type name "Lino." The plainware at Site 3 is not of the Rosa variety mentioned below; only eight sherds, of five or six vessels, are so identified, and they may perhaps be considered as one extreme of the local or normal range. Most of the plain gray is fairly well made, less thin and less rough than some local varieties of Lino.

Site 4 is a small unit-type pueblo, on a small ridge one-half mile east of Site 3. Its refuse mound had been destroyed by the road. Most of its fifteen rooms were excavated wholly or partially; an outdoor firepit (an

[9] Morris, 1939, pp. 203, 212.

[10] Kidder, 1924, p. 67; Martin, 1936, 1938, plates.

[11] E.g., Kluckhohn and Reiter, 1939, plates.

[12] Cf., Morris, 1939, p. 214.

oval clay basin 2 feet long, 6 inches deep from the then ground level, with small vertical sandstone slabs on one side and one end), found beside the northeast corner of the building, and the kiva were also excavated.

Twelve of the rooms of the compact block are normal rectangular rooms, with dimensions of 5 by 7 feet to 7 by 9 feet. The southeast room is long; its length, something more than 13 feet, is uncertain because its south end has been eroded away. The northwest corner consists of a pair of long narrow rooms, each approximately 3 feet wide and 20 feet long. The middle row of five rooms was evidently two-storied. Walls were well plastered, of typical inferior or non-Chaco masonry; floors were partly of adobe and partly flagged with sandstone slabs. Two rooms contained arrangements of metate bins and small floor basins, hardly leaving room for anyone grinding corn, or excavating, to squat.

The deep kiva is of the six-pilaster, Mesa Verde "keyhole" type, 13 feet in diameter at the floor. Features of the kiva include a pair of small holes, obviously for supports for a deflector screen; a square, slab-lined fireplace; a small ash-pit between the fireplace and the deflector and a small pit between the deflector and the ventilator, containing one turkey bone; a jar neck set in the floor as a "sipapu"; a metate bin on the floor against the north wall; an empty vault, 1 foot 3 inches by 1 foot 5 inches and 1 foot 7 inches deep, in the floor close to the southeast wall; little boxes or slab-lined niches in various parts of the wall; and a doorway 2 feet high and 1 foot 5 inches wide in the northeast recess.

The pottery of Site 4 is preponderantly Mesa Verde Black-on-white and standardized corrugated, with considerable amounts also of Mancos Black-on-white and variable corrugated. Also found were two sherds of Pueblo I western black-on-red, Bluff rather than either La Plata or Deadmans; one sherd of Tusayan Black-on-red; and only one of Pueblo I black-on-white. No burials, and relatively few specimens, were found.

Site 7, the fourth site excavated, consisted of a small pueblo and an adjoining Pueblo I site which was almost entirely destroyed by the road. Only a 40-foot row of stones, evidently representing the back wall of a crescentic house-row, remained of the latter site.

The building at Site 7 consisted of a row of four large rectangular masonry rooms. One contained a four-pilaster intramural kiva 12 feet in diameter. The other rooms were 6½, 8, and 9 feet wide, and evidently about 13 feet long. The south ends of all four had been destroyed by the road. Although none was found, there may nevertheless be a subterranean kiva in addition to the room-enclosed kiva found.

Four intramural infant burials without offerings and five refuse bur-

ials, two of adults and three of infants, were found. Four burials consisted only of skull fragments; three, including one adult, were semi-flexed on one side; one infant was semi-flexed face down in a floor pit; and one infant lay on its back, possibly extended, in the fill of a room. Infant burials in refuse were covered by large sherds, adults were accompanied by one or two pieces of pottery. All skulls complete enough to permit this observation showed lambdoid deformation.[13]

The pottery of the Site 7 refuse mound is almost entirely Mancos Black-on-white and variable corrugated. The few sherds from the pueblo include, however, a considerable proportion of Mesa Verde Black-on-white. The Mancos Black-on-white ranges from Pueblo I style through solid triangles and hachured styles to material approaching Mesa Verde. A single sherd of Basketmaker III black-on-gray came from a floor pit. Numerous Pueblo I sherds in the refuse can perhaps be considered as drift from the adjoining Pueblo I site; no stratigraphic differentiation was found. Intrusives include Bluff Black-on-red and a single worked sherd of Tusayan Black-on-red.

Banded-neck gray and iron-paint Pueblo I black-on-white and the Pueblo I orange ware (or black-on-red) types occur with the remnants of the early structure.

Three unusual bone implements were found in the fill of the intramural kiva—a finely made chisel $2\frac{7}{8}$ inches long, of a form which has not been found in the literature, and two large, heavy, sharply pointed awls. Also in the fill of the kiva at Site 7 were numerous turkey bones, and in a floor pit between the ventilator door and the square fireplace was a single one, as at Site 4.

Excavations at Site 11, at Ute Canyon, $11\frac{1}{2}$ miles from Highway U. S. 666, were carried out in that portion of the refuse mound which survived rather severe damage by bulldozing for road construction. The pottery is predominantly Pueblo I, with Basketmaker III grayware at the bottom, indented corrugated and Mesa Verde Black-on-white toward the top, and with comparatively little Mancos Black-on-white.

Just north of this damaged refuse mound is a pair of circular depressions, 50 feet apart, each approximately 30 feet in diameter. Although no domiciliary structure is visible, these seem to be masonry kivas associable with the late pottery rather than early pit houses. To the east is a Pueblo I sherd area, where former structures have been almost entirely eroded away by small gullies.

Three burials with pottery offerings were found in the refuse below the bulldozer swath. One was just below the swath and was badly

[13] Confirmed by Dr. Stewart's report.

damaged; two were adults semi-flexed on the back, one with Pueblo I black-on-white pottery and the other with a plain gray jar referable to Rosa Smoothed and a bowl of Rosa Black-on-gray;[14] and one was an infant, fully extended on the back, at a depth of 6 feet from the surface, in calichified Pueblo I refuse accompanied by two small plain gray pitchers of Rosa affiliation and a black-on-gray bowl of uncertain type, classifiable as early Pueblo I. The infant skull shows lambdoid deformation,[15] possibly the earliest recorded instance.

There is surprisingly little Rosa pottery aside from these two burials; there are several sherds of one plain gray jar and a few sherds of Rosa Black-on-gray bowls, as against 240 sherds of Pueblo I black-on-white, 200 banded-necks, seventy well-made "Lino," and 490 plain gray sherds from either banded-neck or plain "Lino" jars. There are only a few sherds of gray showing traces of decoration other than fugitive red and classifiable as Basketmaker III black-on-gray (La Plata Black-on-white). The Pueblo I black-on-white corresponds to Piedra Black-on-white.[16]

Several sparsely represented varieties of Mancos Black-on-white—squiggled hachure, normal Dogoszhi- or Chaco 2-style hachure, broad stripes, and heavy solid elements—carry the local tradition on up to Mesa Verde. Again there are numerous sherds so intermediate typologically between Mancos and Mesa Verde as almost to merit separate classification, but there is still no internal stratigraphic evidence that any of these "McElmo" types are intermediate in time.

Stratigraphic results at Site 11 are only quite general. Mesa Verde and Mancos Black-on-white and indented-corrugated definitely overlie Piedra Black-on-white and banded-necks. Rosa types are found in association with the latter (Pueblo I). True Basketmaker III underlies Pueblo I. Mancos Black-on-white occurs only in mixed cuts and could not be isolated here; much less could any succession of styles and varieties be determined. The solid-elements style is almost absent.

Intrusive red ware was found in the Pueblo I, and in mixed cuts. La Plata Black-on-orange predominates; there are forty-one sherds, which include a considerable range and often approach Bluff. Bluff Black-on-red, or a closely related type, and Abajo Red-on-orange are represented by four sherds each; there seem to be no sherds of true Deadmans, or of the later types of this ware. There are seventeen orange ware sherds which lack decoration and cannot be typed.

[14] Mera, 1935, p. 2; Hall, N.D. (MS. and materials reviewed at Laboratory of Anthropology. Identification of Rosa pottery from Mancos Canyon by Dr. H. P. Mera and Mrs. E. T. Hall, Jr.).

[15] Confirmed by Dr. Stewart's report.

[16] Roberts, 1930; Mera, 1935, p. 3.

Sites in lower Mancos Canyon not excavated include three Pueblo I sherd areas, two fairly large pueblos of the Mancos and Mesa Verde Black-on-white phases, and nineteen much smaller pueblos—six Mancos, three Mancos and Mesa Verde, nine more or less pure Mesa Verde, and one with virtually no sherds. Any Basketmaker III sherd areas which might exist were missed. Plain gray and black-on-gray occur as minor components at two unit pueblos, as occasional sherds at others.

Of especial interest in connection with the survey is the occurrence of sites only on the second terrace. This upper terrace evidently corresponds to the Tsegi formation in northeastern Arizona and was largely removed, through the middle of the canyon and on the south side, by the erosion epicycle *circa* 1300 A.D. The flat inner terrace now being dissected by the modern arroyo of the Mancos River evidently was deposited between 1300 and 1880.[17]

The excavation project in lower Mancos Canyon during the spring of 1942 brought to light remains of all periods, though certain categories are entirely lacking for certain periods (Pueblo I structures, Mesa Verde burials) and most categories are very weakly represented for even the Mancos period. The sequence of culture in the canyon, by analogy with near-by areas, can be broadly outlined, however, as in the accompanying tabulation.

The Modified Basketmaker or Basketmaker III period, with pit houses, slab-lined chambers, and rough gray pottery, developed, probably by 750 A.D., into Pueblo I with typical black-on-white and banded-neck gray pottery, and with red-on-orange, black-on-orange, and black-on-red intrusive from the western San Juan. Presumably Pueblo I dwellings in the Mancos were rows of surface houses with pit houses or "proto-kivas," like those to the east in the La Plata drainage and to the northwest in the Ackmen district and at Alkali Ridge in Utah. In the Mancos phase or focus (Pueblo II or IIIa), undoubtedly within the period 900–1200 A.D., variable corrugated and Mancos Black-on-white, with various black-on-red types and Chaco black-on-white types intrusive, are associated with small masonry pueblos. In the thirteenth century, standardized corrugated and Mesa Verde Black-on-white, with no intrusives, occur with small and large pueblos. A possible transitional phase is suggested by the occurrence in the upper part of Site 1 of "McElmo" Black-on-white and twelfth-century intrusives.

As might be expected in the heart of the San Juan, the remains are typical Anasazi throughout: grayware (plain gray, corrugated, black-on-white), circular kivas, flexed burials, crude full-grooved or notched stone axes.

[17] Hack, 1942.

Period	*Pottery*	*House-Type*	*Other Material Culture*
1. La Plata focus[18] (Basketmaker III)	Plain gray *affinis* Lino; iron-paint black-on-gray ("La Plata Black-on-white," unslipped); often with fugitive red exteriors.	Pit house with antechamber (probably cf. Morris, 1939, Roberts, 1929); slab-lined round storage chambers (cf. Roberts, 1929).	Tubular brown pottery pipe ("cloudblower"); manos of flat-oval section; crude chipped chert scraper, pebble chopper; (bone tools of this period not recovered); elliptical corncob, 14 rows of very small kernels, possibly a variety of flint corn.[20]
2. Piedra focus (new term) (Pueblo I)	Banded-neck and plain gray; Piedra Black-on-white. Intrusive: San Juan orange ware (Red-on-orange, Black-on-orange, Black-on-red); Rosa gray-ware.	(Presumably crescentic rows of contiguous surface rooms and associated pit houses. Cf. Morris, 1939).	Flat, thin, scoop metates; manos of flat-oval and triangular section; rough stone choppers; crude notched-pebble axes; bone awls; reworked fragment of shell bracelet; worked sherds.
3. Mancos focus (Pueblo II or IIIa)	Variable corrugated (flat-wavy, exuberant, smeared, clapboard, etc.; some coil-necks and plain gray); Mancos Black-on-white. Intrusive: Chaco Black-on-white; Wingate Black-on-red; Sosi Black-on-white; Pueblo I orange ware types, plus Tusayan Black-on-red and Citadel Polychrome.	Small unit-type masonry pueblos with Mesa Verde-type kiva in plaza (six pilasters, large south recess); intramural kiva at site 7; components at large pueblos.	Scoop metates; manos of rectangular, oval, and triangular section; floor-polishers and pot-polishers; notched-pebble axes, small flat *chamahia* blades, scrapers, and choppers; large sandal form; worked sherds; bone awls, bodkins, tubes; red shale pendants; shell bracelet (fragment); small corncobs of three varieties.[20]
(McElmo focus?)	(McElmo Black-on-white; Chaco 3, Sosi, and Citadel instead of in the above.)	(No separate sites)	Thick, heavy, flat metates, manos as above; crude notched* and superior full-grooved axes; chamahias; chipped scrapers; pair of arrowshaft-smoothers of soft sandstone; turquoise and white stone disk beads; bone tubes, chisel,* awls, "daggers,"* bodkins.*
4. Mesa Verde focus[19] (Pueblo III)	Standardized indented corrugated; Mesa Verde Black-on-white. No intrusives. (Wingate Black-on-red and St. Johns Polychrome in period in near-by districts.)	Small unit-type with plaza kiva; double-unit, pueblo with two kivas; large pueblos with intramural and adjoining large kivas; twin kivas, with tower (?), pueblo small or lacking; isolated towers.	

* Found only in circumstances of possible Mancos-period association.

[18] I am following Colton, 1939, in preferring "focus" as the term for the basic unit of classification, since outside the Southwest "phase" is quite differently used.

[19] The reality of the "McElmo phase" (Gladwin, 1934, 1942) seems somewhat questionable. The use of "Montezuma phase" seems an unnecessary addition to terminology with the meaningful name "Mesa Verde" at hand.

[20] Report 22, July 31, 1942, Ethnobotanical Laboratory of the University of Michigan, Associate Curator Volney H. Jones.

Burials	*Sites*	*Designation*	*Probable Approximate Date*
Undeformed dolichocephal, semi-flexed on side, in floor pit in storage cist, no offerings.	Components at Sites 3, 11, and a few survey sites (also: La Plata area, Mesa Verde pit-houses A, B, C; Shabikeshchee, etc.).	Post-Basketmaker, Basketmaker III, Modified Basketmaker; La Plata phase.	450–750 A.D.
Lambdoid deformation, brachycephaly; semi-flexed on back, in refuse, two adults; extended on back, in caliche below refuse, an infant; all with pottery, Rosa and Chaco I-Piedra.	Major component at Site 11; adjacent component at Site 7; sherd areas 22, 23, 24 (also: La Plata, Ackmen, and Piedra districts).	Pre-Pueblo, Pueblo I, Developmental Pueblo.	750–900 A.D.
Lambdoid deformation, brachycephaly; semi-flexed on back or side in refuse, children in twisted positions, more or less face down; with and without pottery vessels or large sherds.	Site 1, major component at Site 7, minor one at Site 4; survey Sites 2, 5, 16, 17, 21, 27, components at 13, 18, 19, 20, 26 (also: "Chaco" period of La Plata and Aztec, earlier component of Lowry and Wilson ruins; widespread in area).	Pueblo II, Pueblo III-A (Chaco), or Early Great Pueblo; Mancos Mesa phase.	900–1150 A.D.
	(components at Sites 1, 7)	(McElmo phase)	(1150–1200 A.D.?)
(Intramural infant burials without offerings at Site 7 could be of the McElmo or Mesa Verde period.)	Components at Sites 3, 4, 11; at survey Sites 15, 18, 19, 20, 26; pure or preponderant at survey Sites 5, 6, 9, 12, 14, 25, 28, 29, 30 (also: later component at Aztec, Lowry, Wilson; at Chaco Canyon; cliff dwellings of the Mesa Verde and the Chinle; many large open pueblos of the upper San Juan).	Pueblo III; Pueblo III-B, late Classic or Great Pueblo of Morris and Roberts; McElmo and Montezuma phases of Gladwin.	1150–1300 A.D.

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STONE IMAGES IN SOUTHERN COLORADO

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DESPITE the familiar abundance of archaeological material in the Southwestern region of the United States, there is a notable paucity of anthropomorphic images of stone. The most significant of such figures which have come to the attention of the archaeologist are those unearthed by Alfred V. Kidder, at the Pecos ruins in New Mexico.[1] Inasmuch as no previous reports of stone images in southern Colorado have come to our attention, the purpose of the present article is to direct attention to the presence of effigies in this state.

In view of the fact that images have been found in New Mexico, it seems plausible that similar objects should exist in southern Colorado. In the course of a survey of the region we have found many indications of an influx of Southwestern culture. Pottery, basketry, and stone artifacts which bear a strong resemblance to those of more southerly tribes have been noted.[2] We should expect this, however, since the foothills on the southern Colorado line form a continuous geographical northern boundary for the cultural groups of New Mexico.[3] Evidences of the extension of Southwestern culture beyond this barrier are found only adjacent to natural passes from New Mexico into Colorado.

We are concerned, in this article, with the region adjacent to one of the more easterly passageways through these foothills. High mesas extend discontinuously to the north of the Colorado-New Mexico boundary; the largest of the eastern mesas is Mesa de Maya, with an area of approximately two hundred square miles. The western front of Mesa de Maya lies about fifteen miles northeast of Branson, Colorado. This region is adjacent to Emery Gap, the lowest passageway into New Mexico. The mesa, with an altitude of approximately 6,800 feet, towers about a thousand feet above the nearby flats and valleys. It is capped by a thick basalt flow of early Tertiary Age which has withstood the erosive processes of nature a great deal better than the underlying sandstones and shales.[4] As a consequence of its resistance to weathering, a great many rugged cliffs and faces of rock jut outward. Caves and overhanging rocks are abundant, though often hidden from casual view by the jagged, basalt masses which may be seen on every hand over the slopes leading toward the mesa-top. The mesa and slopes are covered with pinyon pines and with other characteristic, semi-arid vegetation—bush cactus, scrub oaks, cedars, and prairie grasses. In general, the

[1] Kidder, 1932.
[2] Keur, 1941.
[3] Dondelinger and Tatum, 1942.
[4] Lee and Knowlton, 1917.

aspect of Mesa de Maya is very rugged indeed.[5] It is a grazing land for sheep and cattle at the present time; undoubtedly wild game was abundant in former days, for there was an excellent cover of vegetation, and water was plentiful.

Items of southern culture are quite abundant upon Mesa de Maya and in its environs. It is apparent that man has stalked game in the region for a long time. Folsom and Yuma men hunted in this region, for their points are found from time to time south of the mesa.[6] The eastern and southern Indians filtered in and left many cultural remains during wars, hunts, raids, and migrations. Points, knives, scrapers, pendants, shaft tools, flaked rock, smoked caves, fire beds, and tipi rings all may be found in abundance. Some Indian families settled down to an agrarian life, for we find pots, baskets, corn, and grinding implements in the form of manos and metates.[7] Many petroglyphs have been incised upon the basaltic rocks.[8] Great spirals of rocks and stone enclosures have been built for ceremonial purposes.[9] It is from the immense caves of Mesa de Maya that stone images are reported to have been recovered.

The late Major Henry Abbott, of Trinidad, won the friendship of many Indians and Spanish-Americans during his years of residence in southern Colorado. As a result of his early environment, Major Abbott developed a genuine interest in the archaeology of southern Colorado and acquired a fine collection of accurately classified artifacts, a collection which was enlarged by the generosity of his Spanish-American and Indian friends. Jesus Gonzalez, an aged sheep herder of the Mesa de Maya, was one of the contributors. In the fall of 1935 he gave Major Abbott a much-worn boulder of quartzite upon which was incised a crude face. It was quite evident that the sheep herder, while recognizing this object as unusual, was unaware of its archaeological significance. When questioned as to its origin, he stated that he had discovered it in one of the larger caves of Mesa de Maya. Noting Major Abbott's interest, he promised to explore the caves more fully and to bring with him upon a later visit any objects of interest which he might have discovered. During the ensuing year, Gonzalez discovered sandstone images strikingly different from the original quartzite boulder. Two of these figures have been made available to us and are considered in the present discussion. A subsequent find in 1936 consisted of a basaltic image of apparent antiquity and a much smaller image of sandstone, together with five pendants and fourteen points. The objects found in 1936 are

[5] Renaud, 1931. [6] Renaud, 1934.
[7] Dondelinger and Tatum, 1942. [8] Renaud, 1936, R. M. Tatum, 1942.
[9] Renaud, 1942.

now in the possession of Mr. George W. Heap, of Trinidad. Because the original quartzite image has been lost since the death of Major Abbott, the following descriptions will include only the four stone images and the materials associated with them. We are indebted to Mrs. Henry Abbott and Mr. George Heap for their hearty cooperation.

TABLE 1

STONE IMAGES

	A	*B*	*C*	*D*
Material	Sandstone	Sandstone	Sandstone	Basalt
Color	White with iron stain	Gray	White	Dark gray
Depth of Incision	1.2-.6cm.	.45-.15cm.	.15cm.	1.5-.6cm.
Height				
Face	14.0 cm.	7.7 cm.	1.9 cm.	12.2 cm.
Total	36.8 "	32.5 "	5.7 "	25.3 "
Width				
Head	12.8 "	7.7 "	2.9 "	7.7 "
Shoulders	15.7 "	14.0 "	3.3 "	10.4 "
Base	16.6 "	15.3 "	2.5 "	13.7 "
Thickness				
Head	12.9 "	6.4–0.0 "	1.6 "	6.4 "
Shoulders	10.4 "	6.4 "	1.5 "	7.4 "
Base	13.1 "	7.7 "	1.4 "	9.4 "

Image A (Pl. VI, *a*) was hewn from Dakota Sandstone, native to the Mesa de Maya region. This material is of coarse texture, is light in color, and is characterized by a heavy hematite stain. The carving is well defined but does not cover the entire image. No carving had been done upon the greater portion of the base, the center of the back, the posterior portions of the head, the outer edge of the arm, or the right side of the head. Dried and blackened lichens were noted upon these areas. Image A showed the least patination of any of the figures.

Image B (Pl. VI, *b*) is of native sandstone from the Lower Cretaceous.[10] It is finer in texture than the Dakota Sandstone but is darker in color. This effigy is different in that the anterior carving is all done on a naturally plane surface, and it is unusual in that the area from waist to base is carved apparently to represent a garment with a checkered design. Patination upon the carved areas is so heavy that it tends to obliterate the details.

[10] R. M. Tatum, N.D.

Image C (Pl. VI, *c*) is the smallest of the group; it also shows the finest detail and skill in workmanship, upon both the posterior and anterior faces. It is carved from a light-colored, fine-grained, native sandstone also from local Cretaceous strata. Patination was equally heavy on all faces.

TABLE 2

STONE PENDANTS

No.	*Material*	*Diameter of Hole (in centimeters)*	*Length (in centimeters)*	*Width (in centimeters)*	*Thickness (in centimeters)*
1	Petrified wood	.60	4.9	2.10	1.5
2	Petrified wood	.60	5.5	2.90	1.5
3	Limestone	.60	2.10	1.5	.45
4	Limestone	.60	2.10	1.5	.45
5	Limestone	.60	2.10	1.8	.45

TABLE 3

POINTS

No.	*Color*	*Material*	*Length (in centimeters)*	*Width (in centimeters)*	*Thickness (in centimeters)*
1	Red	Quartzite	4.65	2.45	.61
2	Black	Quartzite	3.68	2.45	.61
3	Black	Quartzite	3.68	2.69	.45
4	Black	Quartzite	2.45	2.5	.45
5	Brown	Agatized wood	3.30	2.4	.60
6	Brown	Quartzite	4.4	3.3	.90
7	Red	Slate	2.45	2.3	.30
8	Brown	Quartzite	3.30	2.4	.60
9	Brown	Agatized wood	3.92	2.45	.45
10	Brown	Agatized wood	2.9	2.45	.30
11	Brown	Agatized wood	2.45	2.3	.60
12	Brown	Agatized wood	1.5	2.0	.30
13	Yellow	Petrified wood	2.40	2.3	.45
14	Black	Quartzite	2.45	2.4	.30

Image D (Pl. VI, *d*), the oldest appearing of the four figures, is of vesicular basalt of local origin. It was evidently taken from one of the intrusive igneous formations adjacent to Mesa de Maya. A great deal of labor must have been expended in sculpturing a material of such hardness. The figure is characterized by a ridge in relief extending over the head.

The artifacts associated with the two latter images consist of fourteen points and five pendants. The points, of imported material, undoubtedly represent the crudest workmanship ever encountered by the authors in this area. They are similar in that all have crude depressed bases, blunt apexes, and only one shoulder clearly defined.

The three smaller pendants are of highly polished limestone and are similar to the majority of pendants that have been found in southern Colorado. The two larger pendants are of fossilized limestone or petrified wood and of crude manufacture.

We must attempt to determine the authenticity of these stone images by considering in the first place, their possible origins and, in the second place, their workmanship and appearance.

The first possibility is of course that Gonzalez manufactured the images himself. We are acquainted with instances of Spanish-American or Spanish-Indian sheepherders having carved stone images during the last century. Had Gonzalez done the work himself we may well inquire as to where he acquired his pattern. The figures bear no resemblance to Christian images, aside from the position of the hands in figures A and B. It has been suggested that the Order of Penitentes might, at one time have used stone images in their ceremonies. Extensive inquiries made of *hermanos mayores*, or heads of such groups, have failed to reveal knowledge of such use.[11] Another possibility that comes to mind is that Gonzalez may have found one image and, using it as a pattern, made the others. It will be noted, however, that the figures are quite dissimilar. Still another possibility is that other Spanish-Americans made the images and that Gonzalez discovered them. In this case the same question as to pattern again arises. There seems to be a valid possibility that at least some of the idols are of Spanish-American origin. Dissimilarity of pattern would tend to support this possibility.

Since the materials utilized are of local origin, we must assume that the images are of local manufacture. The pattern may, of course, have originated elsewhere. This assumption is supported by the similarity of the Mesa de Maya images to some of those found at the Pecos Ruins in New Mexico by Kidder,[12] the similarities include the position of the hands on the chest, flat plane of face, and facial expression. It may be that figures similar to the Pecos images formed the pattern for those from Mesa de Maya. In regard to the possibility of Indian origin, it might be well to mention a report that some years ago, a similar stone figure was excavated, with Indian artifacts in a stone shelter in the Chacaquaque canyon, thirty miles north of Mesa de Maya.

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[11] J. P. Tatum, 1940. [12] Kidder, 1932.

We may conclude that some or all of the Mesa de Maya images may well be of Indian origin and that in all probability authentic Indian figures served as patterns for them. Until further information is obtained or further discovery is made we cannot be entirely certain of the authenticity of these images. But, in any case, the presence of stone images in southern Colorado is unusual and worthy of notice.

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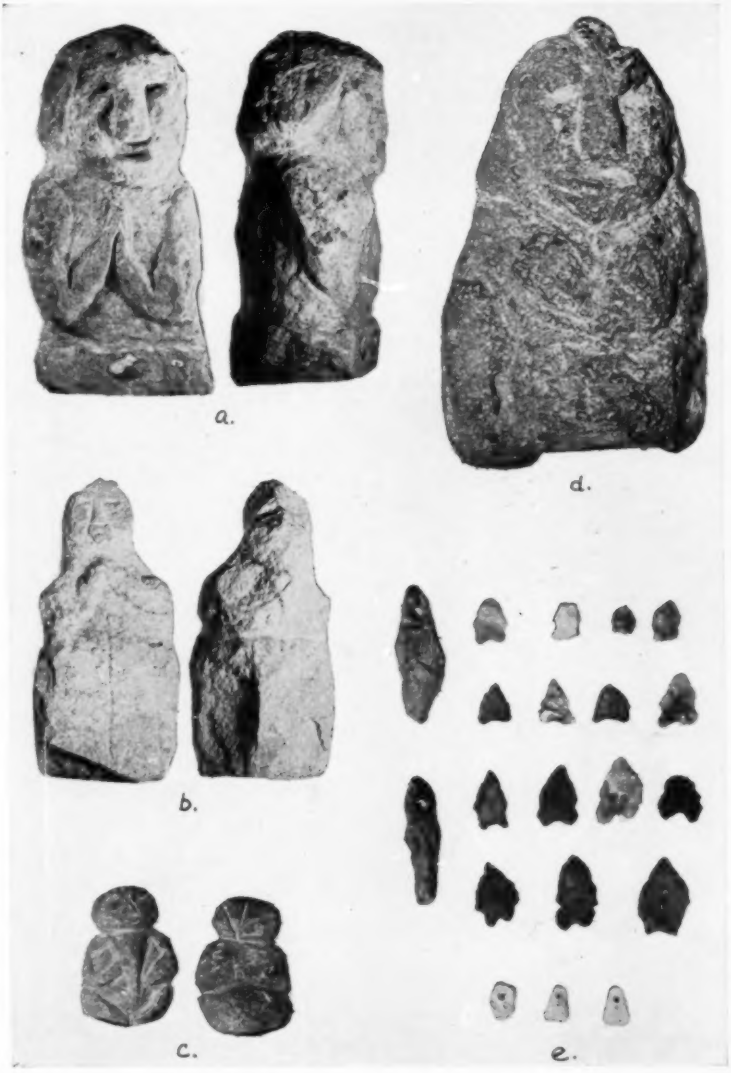
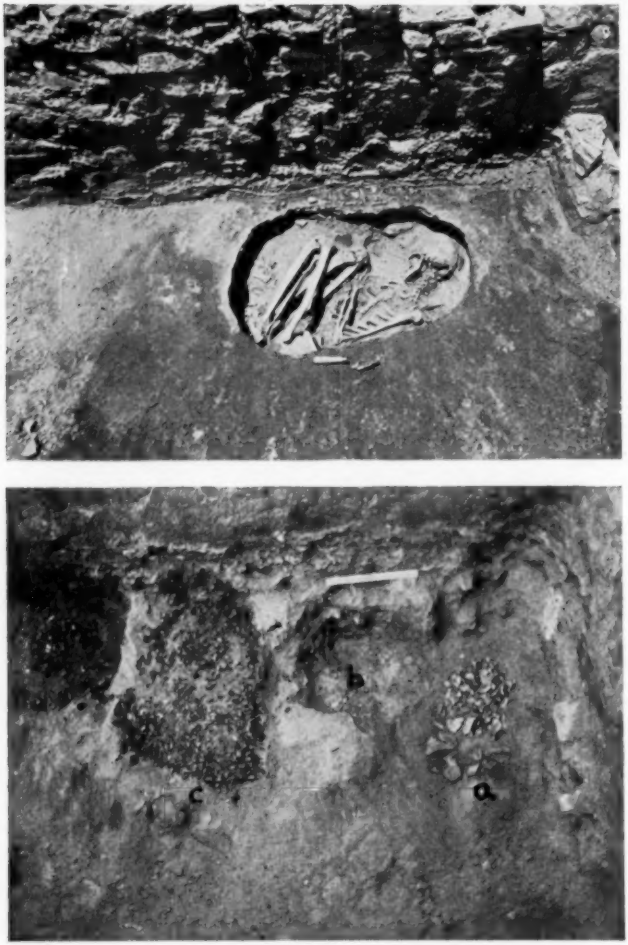


Stone images, points, and pendants from the Mesa de Maya, Colorado.



Pueblo Pardo burials. *Upper*, typical Pueblo Pardo inhumation. *Lower*, typical Pueblo Pardo cremation: *a*, pile of calcined bones and burned sherds, separated from ashes and charcoal; *b*, pit in which cremation occurred; *c*, pile of charcoal and ashes which occurred with cremation.

CREMATION AMONG THE INDIANS OF NEW MEXICO

JOSEPH H. TOULOUSE, JR.

THE discovery of cremations at the ruin of Pueblo Pardo in central New Mexico has added yet another to the multitude of problems concerning the Chupadera Mesa country to be answered by archaeology. Heretofore, most of the data available for this region have been based upon surface survey,[1] and suffer from the inexactitude of that approach; some of the data, also, are based upon the incompletely published excavations at Abó, Quaraí and Gran Quivira National Monument.[2] In the sites of Abó and Quaraí, which consist of important Mission ruins beside ruins of the Indian pueblos, attention has been concentrated upon the former structures almost to the exclusion of the latter. However, some work has been carried on in the pueblo ruins at both Quaraí and Gran Quivira, although, unfortunately, there appears to be little hope for the publication of any reports upon these excavations. The historian's analysis of the area has been ably handled by Scholes.[3]

In the summer of 1941, excavations were conducted at Pueblo Pardo, a puebloan-type ruin, three miles due south of Gran Quivira National Monument. The work was carried on under the auspices of the R. E. Allen-Washington and Jefferson College Expedition, with the writer in charge. The report on this season's work is in process of preparation.

During these excavations, some thirty-six burials were uncovered; of these, seven were cremations. There is some evidence for six other cremations in addition to those mentioned above. Upon an analysis of the stratigraphy and burial accompaniments, four of the above seven were assigned to the lower and three to the upper of the two levels found. These two periods have been assigned focus names, in accordance with Southwestern practice but will not be defined here, since they serve no purpose for this paper except as they show a fairly even distribution of cremations through two late periods in the ruin.

The present paper is a result of this discovery of cremations well within territory considered to be occupied by the Pueblo complex. As far as the writer knows, no other cremations have been found in Pueblo sites in New Mexico except for those found by Hodge in his Zuñi excavations. Therefore, this paper is primarily concerned with accounting for the presence of cremations at Pueblo Pardo.

[1] Mera, 1935, 1940; Shepard, 1942.
[2] Ely, 1935; Toulouse, 1938, 1940; Hewett, 1923.
[3] Scholes and Mera, 1940.

A general survey of the cremation complex in the Southwest presents a number of interesting data, which, however, do not, for the most part, shed much light on our own problem. Nevertheless, on the basis of these data a number of interesting speculations can be made. Still, since our medium of presentation is limited, and since but relatively few data are necessary for the purposes of this paper, it is believed that tangents from the main theme should be left for another time.

HISTORICAL DATA

Of the two periods uncovered at Pueblo Pardo, the upper appears to be contemporaneous with Spanish explorations in New Mexico during the sixteenth century and probably survived well into the first quarter of the seventeenth century. Therefore, since cremations appear in an area contiguous to, if not within, the sphere of Spanish exploration, settlement, and mission endeavors, it is probable that early Spanish explorers and missionaries would have encountered and recorded the practice among the Indians in the sixteenth and seventeenth centuries. With this in mind, a survey of the published translations of documents pertaining to this period was made. In addition, a cursory check of the photostatic documents in the Coronado Library at the University of New Mexico was also attempted. However, since a detailed check would have entailed more time than the writer could spare from his regular duties, recourse was had to the knowledge of these archives possessed by Dr. France V. Scholes and Professor Lansing B. Bloom.

The earliest mention of cremation among the New Mexican Indians was made by Castañeda in his account of the Coronado expedition. In discussing the customs among the people of Cibola (Zuñi) he states, " . . . These people burn their dead, casting with them into the fire the tools the deceased used in their occupations."[4] Such cremations were found by Hodge, both at Hawikuh and Kechipauan (Kyanawa).

The next expedition to enter New Mexico was that of Rodríguez and Chamuscado almost forty years later. This expedition has been documented in several accounts, the best-known of which was that by Hernán Gallegos.[5] Gallegos discusses the many customs and rites the party found among the Indians. A noteworthy exception, however, is the lack of any reference to cremation. This omission is peculiar, inasmuch as Obregón in his *Historia* reports this rite among the Indians of New Mexico[6] and cites Gallegos and other members of the expedition as sources for his information. Obregón's data seem to be well authenticated and accepted by historians.[7]

[4] Hammond and Rey, 1940, p. 253.
[5] Hammond and Rey, 1927.
[6] Hammond and Rey, 1928, p. 297.
[7] Bolton, 1916, p. 141.

Obregón's *Historia* describes the ceremony as follows: " . . . The dead bodies wrapped in some blankets with provisions are burned. The ashes and bones that have not burned out completely are offered to their idol by two Indian women or men selected for this purpose. . . . "[8]

Specific details as to where this ceremony occurred are lacking. There is, however, a significant similarity between the above account and that given in Castañeda. The Rodríguez-Chamuscado party, too, visited among the Zuñi.[9] Detailed analysis of the Gallegos account shows without doubt that the expedition did not reach any of the Chupadera Mesa villages,[10] and, to date, no cremations have been reported from Abó or Quaraí, pueblos actually visited by the expedition.

Shortly after the return of the Rodríguez-Chamuscado expedition to Mexico, an expedition under the leadership of Don Antonio de Espejo set out for New Mexico. This group, too, visited the pueblos of New Mexico but refrained from mentioning cremation among the Indians. But again Obregón refers to reports of cremations in New Mexico, this time by members of Espejo's party.[11] A few additional details are given, supplementing the previous accounts.

Obregón states, " . . . The Funeral honors and anniversary of one who dies consist of gathering all the articles of clothing left by the deceased and throwing the clothing and the body on a heap of firewood and burning it. All of the Indian women in the town come together. Each one carries a little corn and some wood which they throw on the fire until the wood and the body are completely consumed. If a bone remains unburned, no matter how small, it is picked up by those who serve in the temple and thrown into a hole inside of a large one. When they dispose of it thus they say 'toma come,' and then cover it with a stone and fill the large hole with dirt. If any corn is left from the offering because of coming too late for the fire and sacrifice it is carried away by the man or woman who serves in the house of idolatry."[12]

The evidence here is a little clearer as to the possible place of the crematory rites, although again no specific assignment to any particular pueblo is made. The idea of gathering all the articles of clothing left by the deceased harks back to the description of the ceremony at Cibola given by Castañeda, and there is a similarity in the action of picking up the remains of the corn and other late offerings with the same action previously described by Obregón. It would appear that the two ceremonies described by Obregón, if not applicable to Zuñi, are at least related and probably describe the same rite at the same pueblo.

[8] Hammond and Rey, 1928, p. 297.
[9] Hammond and Rey, 1927, pp. 51–52.
[10] *Ibid.*, p. 50.
[11] Hammond and Rey, 1928, p. 337.
[12] *Ibid.*

Further references to cremation among the Indians of New Mexico can not be found in the Spanish documents of the sixteenth and seventeenth centuries. It is logical to assume that cremation probably existed for a time, at least until the introduction of Catholicism by the Franciscan missionaries brought about the substitution of inhumation.

Bandelier gives a description of a cremation ceremony among the Tiwa, taken from Mota Padilla's *Historia de la Nueva Galicia* (p. 160). Padilla gives an account of the Coronado expedition and states that while they were among the Tiwa " . . . On one occasion the Spaniards saw that an Indian having died, they [the Indians] built a large float or wood pile on which they placed the body, covered by a mantle, and then the entire pueblo, men and women, placed upon this bed of firewood, pinole, squash, beans, atole, toasted maize and whatever else they used as food and set fire to it on all sides, so that it was very soon reduced to ashes, together with the body. . . . "[13] Here again the statement appears to be a description of the rite as given by Castañeda and Obregón. As far as the writer can determine, there is nowhere in any of the Coronado expedition papers as complete a description as this, and a close check of Hammond's and Rey's compendium on the expedition fails to disclose any reference whatsoever to cremation among the Tiwa.

ARCHAEOLOGICAL DATA

Archaeological data on the occurrence of cremation in New Mexico are almost as meager as the historical data. Four regions in which cremation is to be found are recorded: (1) Zuñi, (2) Mimbres, (3) Guadalupe Mountains, and (4) Chupadera Mesa. Only in Zuñi do cremations occur in any abundance; in other districts the practice is subordinate to inhumation, and occurs in varying proportion to the latter.

Three styles of cremation disposal have been defined by Sayles,[14] and two others occur in the Guadalupe Mountains of New Mexico. These styles are: (1) trench cremations, in which several cremations are placed in a long trench; (2) pit cremations, in which a shallow pit is excavated and the ashes and calcined bones are placed therein; (3) urn cremations, in which the ashes and bone fragments are placed in jars or bowls; (4) basket cremations, in which the remains are placed in a basket or baskets; and (5) bag cremations, in which the remains are disposed of in a woven bag. These last two would appear to be nothing more than a variation of urn disposal, due to the limitations imposed by the culture in which they are found. The first three types occur in the Hohokam; and urn, pit, basket, and bag cremations occur in New Mex-

[13] Bandelier, 1930, pp. 65–66.

[14] Gladwin, Haury, Sayles, and Gladwin, 1937, pp. 91–100.

ico, with the last two occurring only in the Guadalupes. To date, no traces of trench disposal have come to light in the area with which we are concerned.

Since the only specific reference to cremations in early Spanish documents alludes to the ceremony among the Zuñi, it is perhaps well to commence with the data for this region. Two sites have been reported to contain such cremations, Hawikuh and Kechipauan (Kyanawa).[15] Hodge says, " . . . two forms of burial were practiced—inhumation and incineration, since polychrome ware is found both in graves, often in association with other artifacts, and as receptacles for cremated remains, the calcined bones having been placed with burned food, articles of personal adornment, and sometimes bone and stone implements, in and oftentimes about a jar covered with a bowl, both vessels usually being 'killed' at the time of internment by puncturing the bottom of each vessel, and sometimes the sides of the containing vessel. It should here be said, however, that at Kechipauan no cinerary receptacles 'killed' in this manner have thus far been found. Of the numerous earthenware receptacles found in association with cremated remains at both Hawikuh and Kechipauan, few indeed bear glazed decoration. . . . That the cremated remains were deposited in prehistoric times is shown by the fact that neither at Kechipauan nor at Hawikuh has any article of European manufacture been found in association with the hundreds of cremations altogether uncovered; moreover, the cinerary vessels were placed in pits dug in the earth before the superposed refuse from the houses had accumulated to any considerable extent, since the immediate strata of the latter, which consist largely of ashes, were found undisturbed in every instance."[16]

As can be seen, Hodge's findings at Hawikuh and Kechipauan agree in considerable detail with the various accounts given in the early Spanish documents of Castañeda and Obregón. And from the evidence of these accounts, cremation among the Zuñi must obviously have lasted into early historic times. The cremations found by Hodge at Hawikuh belong largely in the late prehistoric period of mat-paint polychrome, in which Gila Polychrome is also prominent.[17] No evidence has appeared of cremations in the Zuñi region prior to the fourteenth century.

Cremations occur sporadically throughout the Mimbres region and are distinctly in the minority. Two types are found, pit cremations in the early foci,[18] and urn cremation in later periods.[19] Haury uncovered one pit cremation at Mogollon:1:14 and two at the Harris village. Ac-

[15] Hodge, 1920, pp. 53, 55–56.
[16] *Ibid.*, pp. 55–56.
[17] Hodge, 1922, p. 8; 1924, p. 14.
[18] Haury, 1936, pp. 24, 64.
[19] Cosgrove and Cosgrove, 1932, pp. 25–26; Nesbitt, 1931, p. 44.

companiments included a shell ornament, *Vermetus* beads, yellow paint, galena, and arrow points.[20]

Urn burials have been found at several classic-period sites in the Mimbres: Swarts,[21] Galaz,[22] and Mattocks.[23] There appears to be some slight variation in the manner of disposal in urns. At Swarts, killed bowls or large sherds were inverted over the bones, and, in two instances a bowl contained the remains while another was inverted as a cover. Nothing is said about any mortuary offerings with the cremations other than the bowls of which, in a few cases, there were several.[24]

At Mattocks, each of the two cremations reported had two bowls associated, one containing the remains, the other inverted over the orifice of the first.[25] Sifting of the cremations yielded shell beads, pendants, and obsidian arrowheads.

The cremations in the Mimbres region must be considered intrusive, since their numbers are extremely insignificant compared with those of bodies disposed by inhumation. As for the presence of cremation in the early foci at Mogollon village and Harris village, this again must be intrusive, for no occurrences of the phenomenon have been reported by Haury from Forestdale,[26] or by Martin from the SU site.[27] These last two sites represent still earlier foci of the Mogollon complex.

In the caves of the Guadalupe Mountains, basket and bag cremations are found. It is evident from the lack of pottery in these caves that the method of disposal is more or less an adaptation of the urn type to local conditions. The stratigraphy and chronology of these caves, and their relationship to the ceramic sites in the surrounding country and to the Puebloan complex, still remain to be established. This lack of any known relationship and of chronology makes it difficult to establish the origin of cremations in the Guadalupes or any influence which this region may have had on others.

Several sites from the Guadalupe Mountains, notably Burnet Cave,[28] Cremation Cave, a cave near Guadalupe Point, another in South Three Forks Canyon,[29] and Williams Cave,[30] have yielded cremations. For the most part, these cremations were of the basket type and contained a few mortuary offerings, but bag cremations are also known, particularly from Williams and Burnet caves. Inhumations also occur in the caves; they are, in fact, more frequently found.

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[20] Haury, 1936. [21] Cosgrove and Cosgrove, 1932.
[22] Bryan, 1927, pp. 331–332. [23] Nesbitt, 1931.
[24] Cosgrove and Cosgrove, 1932. [25] Nesbitt, 1931.
[26] Haury, 1940, p. 66. [27] Martin, 1940, pp. 88–93.
[28] Howard, 1935, pp. 67–68. [29] Mera, 1938, pp. 41–42.
[30] Ayer, 1936, pp. 600–601.

Howard describes a typical bag cremation, " . . . Burial B2, nearer the front of the cave and resting on a part of the sloping shelf of solid rock along the east wall, consisted of a finely made twined woven bag . . . of two-strand yucca cord alternating red and white. The bag was further decorated with black and yellowish lines and bands at intervals of from three to eight and a half inches. It had a circumference of approximately four feet near the open end, and a maximum longitudinal length of slightly over two feet. . . . The bag had been split part way to the bottom, and charred bones were found resting on a piece of antelope skin with the hair turned in, and on top of it was resting a small piece of buffalo hide with the hair still intact. . . . Also in the bag was a string of seed beads . . . , and a feather head-dress . . . composed of cords similar to the bag. The feathers are those of the Golden Eagle, according to Dr. Wetmore of the United States Museum."[31]

Howard also describes a basket cremation from Burnet Cave, " . . . B1 was the first burial that we found. It consisted of two coiled baskets, one evidently placed over the other, though the upper one had been somewhat crushed by the rocks above it, and most of the centre had been knocked out. Inside of the lower basket were what seemed to be remains of disintegrating human bones, and judged by the other basket and bag burials in the cave that contained charred human bones, B1 also seems to have been a burial. . . . "[32]

Until excavations were made at Pueblo Pardo in 1941, no cremations had been reported from the villages on Chupadera Mesa. Pit-type cremation was the method of disposal found at Pueblo Pardo. Bits of bone, ashes, and charcoal, with a few mortuary offerings, were placed in a small hemispherical pit below the floor of a room. Some of these pits were chipped from the limestone-bedrock underlying the site. Still others were in the sub-soil beneath rooms and were lined with adobe. Mortuary offerings consisted of sherds, calcined shell pendants, and, in one instance, three fragmentary bowls. All the pottery was burned as if it had been in the crematory fire.[33]

CONCLUSIONS

We are here concerned primarily with the presence of cremation at Pueblo Pardo, and secondarily, only as it affects our problem, with its occurrence elsewhere in New Mexico. However, several problems arise: (1) Whence came the rite to the Chupadera Mesa villages? (2) When was it introduced? (3) What cultural process was the means of introduction?

[31] Howard, 1935, p. 67. [32] *Ibid.*
[33] Toulouse and Stephenson, N.D.

Problem 1. It is evident from the preceding account that cremations could have been introduced from several sources. One of these, the cave-dwellers of the Guadalupe Mountains, could have been the group from which the rite was immediately received. The plausibility of such an explanation lies in the geographical proximity of the two groups and the fact that Mera has found a few sherds of Chupadero Black-on-white, plain brown ware and El Paso Polychrome in the caves.[34] Two of these wares—Chupadero Black-on-white and the plain brown ware—occur in the early level at Pueblo Pardo, after they had become well established. This might indicate a link, albeit slim, since it is commonly thought that the hearth for Chupadero Black-on-white is the Chupadera Mesa villages. However, the relative paucity of cremation in comparison with inhumation, among the cave-dwellers would argue that the rite was intrusive here as well, and that it was perhaps introduced from still further afield.

In a search for this place of origin one does not have to look far, for there was, in the Gila Valley of southern Arizona, a prehistoric people who practiced cremation to the exclusion of inhumation. Cremation occurs uniformly in Hohokam sites, from the Pioneer period to the Sedentary. Only in the latter portions of the Sedentary do inhumations appear, becoming common in the following Classic period.[35] It is apparent that here is the source for cremations in the Mimbres region, for this trait was not the only one introduced there from the Hohokam. Furthermore, a connection, although somewhat remote, exists between the area now comprised in southwestern New Mexico and southern Arizona and the Chupadera Mesa region, in that a ware quite similar to, if not identical with, San Francisco Red is found in sites of the Mesa characterized by brown ware. This type occurs as an intrusive trade ware in the Gila Basin, from the Pioneer period of the Hohokam to the Sedentary period.[36] The brown ware sites of the Chupadera Mesa which contain this red pottery are contemporaneous with earlier Pueblo Pardo components as yet undescribed.

The occurrence of cremations at Zuñi is apparently another manifestation of a cultural trait spreading from the Gila Basin, as the cremation urns are very similar to the polychrome styles prevalent in late Gila Basin archaeology.

Problem 2. For a complete answer as to the time at which the rite of cremation was introduced, further research is necessary. On the basis of present excavations, the introduction of cremation is placed conserva-

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[34] Mera, 1938, p. 60.

[35] Gladwin, Haury, Sayles, and Gladwin, 1937, p. 94. [36] *Ibid.*, p. 214.

tively as occurring prior to 1300 A.D. With this in mind, and accepting the Gila Basin as the center from which the trait spread, the presence of pit cremation would argue for a fairly early introduction, at least before urn cremation became prevalent in the Gila (*circa* 1100 A.D.),[37] especially since urn cremation occurs in the intervening Mimbres region by or after 1100. One additional piece of evidence is available; the brown ware found at Pueblo Pardo is hardly distinguishable from Alma Plain, a characteristic type of the Mogollon complex.

Problem 3. Concerning the transmission of the trait, two methods seem probable, i.e., contact through trade or contact through migration. A third possibility, one which seems hardly logical, is that we have here a manifestation of independent invention. Actually, this problem will remain unsolved until further research can answer, at least in part, the other questions raised here.

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[37] *Ibid.*, pp. 92–93, 216.

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Gran Quivira National Monument
Gran Quivira, New Mexico
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A CHAPTER IN NAVAHO-PUEBLO RELATIONS

DOROTHY L. KEUR

IN AN effort to expand the known range of early Navaho history, an area in north-central New Mexico was chosen for survey and excavation in the summer of 1940.[1] This territory lies just south of the Colorado line, between 107° and 108° longitude, and between 36° and 37° latitude, in the northwestern part of Rio Arriba County, in the upper San Juan drainage. Reconnaissance extended over the country within a radius of from ten to fifteen miles from Gobernador. The area is about thirty-five miles east of the town of Aztec and includes the canyons of Compañero, San Rafael, Muñoz, Gobernador, Frances, La Jara and Pueblito.[2]

Sites from this region had been noted as early as 1912 by Kidder and Morris,[3] who point out their seemingly Pueblo-Navaho nature. Father Berard[4] and Van Valkenburgh[5] report hogan remains on the slopes of Gobernador Knob, sacred in Navaho mythology, and Mera obtained pinyon specimens for dating from several small pueblo-like structures in this region.[6] The presence of hogan remains in association with such structures was noted.

The region is quite heavily wooded, with a close cover of cedar and pinyon, and spruce occurs in the upper reaches. The several main washes and their side branches are bordered by mesas, formed of a series of steep escarpments alternating with flat bench-like areas. These flat benches, with their fairly dense vegetation, make excellent sites for hogans, places from which to see, without being seen. The region also has an adequate water supply, furnished by several good springs.

DESCRIPTION AND EXCAVATION OF SITES

The sites consist of groups of hogans with associated structures, such as sweat houses and storage pits, all Navaho in character, and mixed groups of pueblitos (small pueblo-like structures) or tower-pueblitos with hogans clustered nearby. At twenty-four sites, groups of hogans and allied Navaho structures were found, devoid of any association with

[1] Under the auspices of Columbia University, New York.

[2] These canyons are listed here in order, roughly from southwest to northeast. Other areas where Navaho archaeological material has been studied include the Big Bead Mesa site, 100 miles to the south (Keur, 1941), the Chaco Canyon area (Malcolm, 1939), Canyon de Chelly (Hurt, 1942), and the upper Blanco and Largo Canyons (Farmer, 1942), the last two contiguous to the Gobernador area to the southeast.

[3] Kidder, 1920. [4] Haile, 1937. [5] Van Valkenburgh, 1941, p. 66.

[6] Dated by E. T. Hall, Jr., 1939.

puebloid architectural forms. Of twenty-six pueblitos and tower-pueblitos, twenty-two were clearly associated with hogan groups. In two cases hogans were too distant to suggest definite association, and in two additional cases no traces of hogans could be found in the vicinity of the pueblitos. The location of most pueblitos and tower-pueblitos on mesa tops and promontories, and often at the junction of two canyons, however, was such that they could be seen from almost all of the isolated hogan groups, though the latter were usually well hidden along timbered projecting benches of the mesa wall. Since most of the hogan groups were contemporaneous with the puebloid structures, the hogan dwellers might well have been in contact with pueblo "centers" through some sort of signalling.

Hogans. The number of hogans in the area is notable. Two hundred and seventy-three were located in the brief and cursory survey undertaken, of which nineteen were excavated. The great majority are of the well-known forked-stick type, and in a good number all the timbers are present and in place. Sixteen of them conform to the stone-ring form, with large and irregularly shaped boulders. The hogans excavated were fairly uniform in character and conform in general plan to those described for Big Bead.[7] Doorways usually face east or southeast and are marked by boulders, slabs, and/or doorposts. One hogan in the San Rafael Compound site[8] has an elaborate entrance passage which extends 3 feet 10 inches (1.17 m.) into the floor of the hogan proper and is formed of posts set into the ground. Another hogan of the same group has an elaborate vestibule, the walls of which, made of sandstone-blocks, extend out from the hogan and terminate in large flattened pinyon slabs. The walls, together with a roof of cedar sticks, form a covered passageway.

Fireplaces usually occur in the center of the floor, although nine exceptions prove that the off-center position was fairly popular. Only a single deflector was noted. Five bins, presumably for mealing, consist of long thin stone slabs set on end, enclosing three sides of a rectangular space. In one case, a fourth slab completely encloses the rectangle.

One hogan had an unusual number of household objects on the floor, suggesting unpremeditated abandonment. This hogan was one of a group in Pueblito Canyon, unassociated with any puebloid structures and even devoid of puebloid pottery. In its doorway lay a mano. Between the firepit and the eastern doorway was a complete metate, apparently in situ. An elongate mano beside it exactly fitted the concavity of the metate and showed considerable use. Another mano and three

[7] Keur, 1941, p. 22. [8] Kidder, 1920.

mano fragments lay nearby. Just northeast of this section, close to the hogan wall, was found the greater half of a conical-bottomed Navaho cooking pot (Pl. VIII, *a*). In the southwest quadrant was a four-sided bin. Between the latter and the fireplace was a smooth stone with reddish paint resting on a larger stone, suggesting a paint-grinding outfit. A collection of seven small stones, 2 or 3 inches (5.08 to 7.62 cm.) in diameter, showing smoothing and battering lay between the bin and the hogan wall to the southwest. A section of floor south of the doorway, against the wall, was covered by masses of shredded cedar bark, forming a kind of loose matting.

Cist and Burials. A rather large and elaborately constructed cist, 8 feet 6 inches (2.59 m.) in maximum length, occurred in association with the above hogan. A semicircular wall had been erected on an adobe base under a large overhanging boulder. It was made of well-matched stones, evenly laid and interspersed with adobe and was roughly finished on the outside with a heavy coat of adobe. Within the cist were found pinyon and cedar sticks of a form suggesting ploughs (see p. 79, Pl. VIII, *c*); a notable quantity of corn cobs; and, on the floor, in a crudely made rectangular trough of stone slabs lined with cedar bark, the remains of a human skeleton. This skeleton was badly disturbed and incomplete. The only other evidence of a burial was found under an overhanging rock near the junction of Pueblito and La Jara canyons. It was even more fragmentary than the cist burial and was in very poor condition due to seepage of water.

Sweat Houses. Twenty sweat houses were located in association with hogan groups. They were usually somewhat removed from the dwelling houses, according to good Navaho practice. Their distinguishing characteristic was a semicircular heap of fire-reddened stones, so located as to suggest that they were thrown out of the doorway after use. In three cases, partially collapsed timbers were still present.

Pueblitos and Tower-Pueblitos. The term "pueblito" is used by the natives of Gobernador and vicinity to designate a "little stone house." Since the stone-walled structures found in association with the hogan groups are puebloid in character and fairly unpretentious and small in size, it seems a happy term to adopt. Some of the pueblitos are clearly defensive in position and construction. They incorporate a tower-like structure, sometimes but not invariably round in form; hence the term tower-pueblito has been applied to them (Pl. VIII, *b*). The two types are not always clearly distinguishable, however, since many pueblitos occupy fairly prominent locations and some tower-pueblitos have very little in the way of defense structures. Thirteen pueblitos and thirteen tower-pueblitos were located by the survey made in the summer of 1940.

Two pueblitos were excavated, one at the edge of the southwest mesa above the junction of the Pueblito and La Jara canyons; and one on the mesa bordering the north side of Muñoz Canyon. In the character of the rooms, wall and roof construction, windows, fireplaces, and other architectural details, the structures are typically puebloid. In the Pueblito-La Jara example no outside doorways were discovered, suggesting that the only mode of entrance may have been through the roof. The west wall of one room is notable for the presence of two holes, measuring 5 by 6 inches (12.70 cm. by 15.24 cm.), situated 3 feet (91.44 cm.) above the floor level. They had been carefully and solidly plugged with adobe. Similar phenomena, i.e. adobe-plugged holes, were observed at a tower-pueblito in Frances Canyon. In both cases the walls containing the plugged holes faced an area where hogans were located. It seems possible that the pueblitos had been constructed first, and that after the hogans became associated with them such sighting (?) holes were no longer necessary and hence were closed off. Unfortunately no datable wood from the associated hogans was procurable to indicate the relative ages of the pueblitos and hogans. The Muñoz pueblito is a small two-room structure. One room has walls of long sandstone slabs and blocks neatly laid with adobe mortar to a height of 89 inches (2.26m.). The second room has only one or two rows of sandstone blocks and boulders standing and there is almost no fallen rock nearby. This suggests either that the room had never been completed, or that the superstructure was of wood or other perishable material which left no traces. The roofing is still present on the north end of the first room, and metal axe marks appear on the beams. In the northwest corner of this room is a Spanish fireplace of the hooded variety. Another of this type occurs in one of the Frances Canyon pueblitos.

The tower-pueblitos are usually more imposing than the pueblitos described above. In most cases a round or asymmetrically walled tower forms the heart of the structure, with a cluster of stone-walled rooms around it. Some are only one story high, as in the case of the structure at the junction of the Frances and Isadore Garcia Canyons. But the example near the northwest head of the Pueblito wash of the Frances rises majestically to four stories (Pl. VIII, *b*). The tower has rounded walls on the north and south sides but flattened, somewhat sloping, ones on the east and west. One of the most interesting sites exemplifying architecturally the very close relationship between Navaho and Puebloan at this period is situated on a mesa top in San Rafael Canyon.[9] It consists of a rather large and elaborate pueblo, from which extends a high com-

[9] This site was visited by Kidder and Morris as early as 1920 and is briefly described by Kidder, 1920.

pound wall enclosing a large area with maximum dimensions of approximately 84×78 feet (25.59×23.77 m.). Within this enclosed compound are eight typical forked-stick hogans, three of which were excavated in the summer of 1940.

The survey and excavation of the above sites of the Gobernador region thus indicate a very close relationship of Navaho and Puebloan—peoples diverse in culture and tradition—at least for the period of occupation in this area.

Both agriculture and hunting were practised. Remains of corn cobs, squash seeds, and fragments of squash rinds attest to the former; the presence of numerous bones of the mule deer, American elk, and prong-horn antelope confirm the latter. No sheep bones were found,[10] but a considerable number of horse bones indicate the knowledge and use of this introduced animal.[11] Projectile points of stone are sufficiently numerous and small to suggest widespread use of the bow and arrow. Three large specimens appear to be spear or dart points. Considerable diversity of form and material is shown.

An indication of agricultural methods is given by two worked sticks of manzanita, identified by Wyman's informant DS[12] as digging sticks. They are approximately 40 inches (1.01 m.) long and ¾ of an inch (1.90 cm.) in diameter, with flattened lower ends tapering to rather blunt points. The upper 8 or 10 inches (20 or 25 cm.) are free of bark and have been smoothed. Within the large cist occurring in association with the "pure" Navaho hogan group in Pueblito Canyon, twelve heavy pinyon and cedar sticks were found. They all had markedly curved, projecting, basal ends, many of which showed evidence of flattening and fire-hardening. It is possible that such sticks served as hand ploughs.[13] One Y-shaped example is particularly suggestive, for the two arms of the Y could be used as handles (See Pl. VIII, *c*).

The large number of manos or mano fragments, of which we found eighty-one, testify to the prevalence of grinding. Presumably most of them were used for flour making. They vary considerably, but the most common form is the long, flattened, two-handled type, with one surface perfectly flat, and the other somewhat convex around the margins. Both sides of this type show wear. Three metates were found, one of them in situ on the hogan floor. Large flat sandstone slabs with smooth upper

[10] Sheep bones were quite plentiful at the Big Bead site. Keur, 1941, p. 46.

[11] For the identification of all bone material, the writer is indebted to the late Dr. Glover M. Allen.

[12] DS is listed, with pertinent information, in Wyman, Hill, and Ósanai, 1942, p. 10.

[13] Clark, 1928, Fig. 7, p. 246, pictures a very similar form, which he describes as a Papago plough made from a single piece of mesquite wood, and used before the steel plough was introduced.

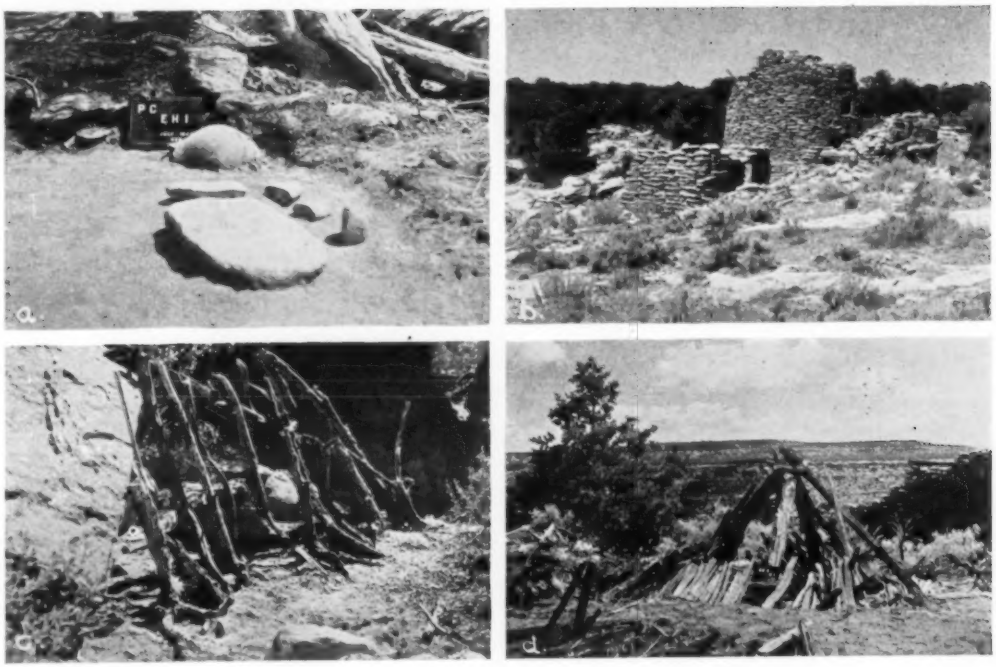
faces thoroughly and thickly fire-blackened occurred in the fill or on the floor of five sites. These are recognized by the people of Spanish ancestry who inhabit the region at the present time as *comals*, or griddles, used in cooking.

Work in stone and bone. Work in stone appears to have been abundant, but very heterogeneous in form, materials, and workmanship. Flaked and chipped artifacts are made chiefly of chalcedony, quartzite, and obsidian, though a few made of chert, jasper, and slate occur. Forty-one projectile points, twelve scrapers of both end and side varieties, and sixty-seven knives or blades were found. Several blades have erratic shapes and show notching along one or more edges. Three stone drill points were found. A rather large core of impure chert, $4\frac{5}{8}$ inches (11.75 cm.) long, with one surface rather flat, the other rough and keeled, suggests a coup-de-poing. A broad striking platform at the top suggests that this was a source of material for small flaked tools. Ground stone artifacts are made mostly of sandstone, though a notable number are of coarse igneous rocks, such as scoria, and diorite, while others are of quartzite, chert, or mica schist. Manos, metates, and comals have been described above. Other types of ground stone artifacts include sixty-five hammerstones or choppers ten smaller water-worn pebbles showing artificial facetting and presumably used as pot polishers, seven shaft smoothers of the elongate single groove type, a large maul, and a grooved axe head.

Evidence of bone work is sparse. The most common bone artifact is a very sharply pointed, nicely polished awl, of which nine specimens were found, made from the proximal end of the metapodial bones of the mule deer. A section of hollow mule deer bone from Santo Niño had been cut and polished at both ends. The cut and smoothed tip of a tine of mule deer antler found at the Horn Ranch site looks like a blunt-tipped point.

Metal. The few metal artifacts bespeak European influence. An iron point or worked-down knife blade from Pueblito Canyon is too nondescript to permit identification as to type, although it appears to have been hand forged. An iron axe head was found in the fill of the pueblito at the junction of Pueblito and La Jara canyons. It is a rather small camp type, of European style, characteristic of the seventeenth and eighteenth centuries. Such axes had no poll and hence are distinguishable from the American-made axe, which began to evolve around 1750.[14] A copper button from San Rafael Canyon had a centrally located four-sided perforation and two small perforations on opposite sides near the margin.

[14] Identification made by Arthur Woodward.



Sites in Gobernador region. *a*, portion of hogan floor with metates, manos, and cooking pot, Pueblito Canyon; *b*, tower-pueblito, Frances Canyon; *c*, sticks with curved ends (ploughs?) from cist, Pueblito Canyon; *d*, forked-stick hogan within compound wall, San Rafael Canyon.

Ornamentation. The copper button presumably was used as an ornament. Other finds in this category include perforated *Olivella* shells; pendants, one of clay and one of chalcedony; and a single large fragment of a blue glass trade bead. The latter is of a type usually associated with late seventeenth and early eighteenth century historic sites.[15]

Spinning and Weaving. Two pottery spindle whorls testify to a knowledge of spinning. A flattened wooden slab, presumably of oak, was excavated from the fill of a pueblito room at the junction of Pueblito and La Jara Canyons. It is 25 inches (63.5 cm.) long, has a maximum breadth of $3\frac{1}{2}$ inches (8.89 cm.), and is $\frac{3}{8}$ of an inch (.95 cm.) thick. The edges show rubbing from use, and there is a series of parallel lines or grooves running diagonally across one face. The slab is asymmetrical in form, rounded at one end, and broadening out at the opposite end, where it finally tapers to a point. Wyman's informant DS identified this object as a one-handed batten used on a narrow loom, thrust in from the side at a slant or angle. This interpretation accounts for the asymmetry of form and for the diagonal slant of the lines worn by the warp.

Games and Ceremonial Material. Two small slabs of cottonwood $4\frac{7}{8}$ inches (12.38 cm.) long, flattened on one surface, and with rounded ends, appear to be gaming pieces. The flattened sides show remnants of black paint. They were evidently used in a variety of stick-dice game.[16] An irregular disk with neatly smoothed sides, made from a Jemez Black-on-white sherd, also suggests a gaming piece.

Under a small overhanging rock in San Rafael Canyon, two hoops of slender twigs had apparently been cached. The twigs had been bent so that the ends very nearly met and were bound with withes. The circlet thus formed is 11 inches (27.94 cm.) in diameter. Small bundles of fir twigs, 9 inches (22.86 cm.) long and bound together with strips of yucca, were attached to the hoops at four points. Several fir needles are still present. The whole suggests a piece of ceremonial paraphernalia. The use of hoops in religious ritual has been recorded, and the ceremonial unraveling of hoops which had had plant forms tied to them at four points[17] is highly suggestive of a possible function of the hoops found in San Rafael Canyon.

Two clay pipes indicate the practice of smoking. One, of tubular form, grayish black in color, of smooth finish but undecorated, occurred in the fill of a Pueblito Canyon hogan. It tapered gradually, for half its length only, toward the smaller (stem) end, which had an opening

[15] According to Arthur Woodward.

[16] Such as is described by the Franciscan Fathers, 1910, p. 481. See also Aberle, 1942, p. 144.

[17] Franciscan Fathers, 1910, p. 416.

about ¼ inch (.63 cm.) in diameter. The second example is a fragment of a cylinder made of very fine, hard paste. It is grayish in color and unbelievably smooth in surface finish. The decoration consists of three slightly raised bands, each $\frac{3}{16}$ of an inch (.47 cm.) wide, separated from each other and from the body of the cylinder by deeply cut grooves. The workmanship is so excellent that it almost suggests lathe turning rather than hand manufacture. Wyman's informant DS identified this fragment as part of a pipe used in a ceremonial hunt. He named Antelope Corral Way[18] as the specific ceremony involved.

Basketry. One large basket, of coiled technique,[19] was observed. The foundation is a single willow osier. This specimen has much the same form as a Navaho cooking pot.

Pottery. Pottery was abundant, and sherds were literally strewn over all sites. One source of raw material for pottery manufacture was discovered on a rock ledge near a pueblito in Muñoz Canyon. It is a clay quarry consisting of an outcrop of pure greenish-gray clay.

Collections were made from the surface of all sites surveyed, and sherds were obtained from the fill of all excavations. The pottery types fall easily into four major groups: (1) Navaho utility ware, (2) Gobernador polychrome, (3) Puebloid wares of the seventeenth and eighteenth centuries, and (4) Pit House wares. The characteristic Navaho utility sherds constituted 78.62 per cent of all sherd material obtained.[20] Three varieties of appliqued fillet around the neck region were noted.[21]

Of the painted wares, Gobernador polychrome is by far the most plentiful, making up 14.4 per cent of all sherds typed, whereas all the typically puebloid painted wares together make up only 4.69 per cent of the total. One partially restorable pot from a site on Cerritos Ridge is an interesting "hybrid," with the constricted neck, recurved rim, and sub-conoidal base so typical of Navaho utility ware, but with a surface treatment highly suggestive of Gobernador polychrome. The decoration consists of reddish-brown paint over a buff slip, with an irregular line of weak black paint.

The abundance of Gobernador polychrome and the general excellence of its quality suggest a golden age of ceramics for the Navaho in this area during the first half of the eighteenth century.

Of the seventeenth and eighteenth century Puebloid wares, making up 4.69 per cent of the total, at least seven types are represented. Chief of these is Ashiwi Polychrome which comprises 3.97 per cent of the

[18] Hill, 1938, p. 145.

[19] In the possession of Mrs. Lobato of Blanco, New Mexico.

[20] Percentages are based on 11,143 sherds, the total number collected.

[21] By Kidder, from photographic and descriptive material kindly placed at the disposal of the writer.

total. Kidder and Morris obtained at least six restorable bowls and several ollas of this type from the Gobernador region.[22] Jemez Black-on-white is represented, though sparsely (slightly more than ½ of 1 per cent. Since Jemez pottery became extinct in the early part of the eighteenth century,[23] these few examples are from the close of the Jemez pottery-making period.[24] A very few Tewa Polychrome, Ogapoge Polychrome, Puname Polychrome, and Hopi sherds were found. Kidder and Morris obtained two restorable Ogapoge Polychrome ollas and one olla and two bowls of Puname Polychrome, as well as a Pojoaque Polychrome olla.[25] A few sherds of a late Rio Grande glaze ware are notable. Two ollas ascribed to the Kotyiti Polychrome ware, obtained by Kidder and Morris, have been restored.[26]

The sherds characteristic of the Pit House culture (Rosa phase) are believed to be intrusive.

All types of sherds are present in hogan groups unassociated with any puebloan architecture and in hogan-tower-pueblito complexes, with two notable exceptions: (1) Glaze ware, including the sherds found by the writer and the ollas reported by Kidder, occurred only in the pueblitos or tower-pueblitos, and have not been reported from hogan sites. (2) Only Navaho utility ware occurred at one complex of hogans in Pueblito Canyon. Neither puebloid wares nor Gobernador polychrome were found.[27] Hence this group of hogans suggests a "pure" Navaho settlement in an area replete with evidences of intimate Pueblo-Navaho associations.

Of the areas where eighteenth century Navaho sites have been studied thus far, including the Big Bead sites, Largo, Blanco, and Chaco Canyons,[28] and Canyon de Chelly,[29] the Gobernador region shows by far the greatest ceramic diversity.

Specimens of wood were secured from all sites where datable material was available.[30] The span of time indicated by dendrochronology

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[22] Mera illustrates three of these Gobernador specimens. Mera, 1939, Pls. 56, 58, 66.

[23] Mera, 1939, p. 4.

[24] It is notable that not a single Jemez sherd was found in the somewhat later Big Bead occupation. Keur, 1941, p. 54.

[25] Illustrated by Mera, 1939, Pls. 16, 17, 37, 46, 21.

[26] One of these is illustrated by Mera, 1939, Pl. 33.

[27] A single Jemez Black-on-white sherd was discovered in the fill of one hogan excavated.

[28] In the chart prepared by Farmer, 1942, p. 78, under the heading Gobernador Canyon, all pottery types listed except Gallina Utility(?) should now be checked as present. Hopi and Kotyiti Polychrome, a glaze ware, should be added.

[29] Hurt, 1942, pp. 89, 99.

[30] The total number of such specimens was thirty-five. All dating was done by E. T. Hall, Jr. and was checked by S. Stallings, Jr.

covers more than a century. The earliest date recorded is 1656 ± 20, from a hogan in Pueblito Canyon.[31] The Pueblito Canyon complex, of which this hogan is a part, is not associated with any Puebloid architectural features. Moreover, neither Gobernador polychrome nor Puebloid wares were found here.[32] This suggests the possibility of a "pure" Navaho site preceding the coming of the Puebloans to the region. However, two other hogans of this complex are dated at 1752 ± 3 and 1728 ± 20 respectively, indicating construction at a time when the region was occupied by mixed Pueblo-Navaho groups. The latest date reported for an isolated hogan in this area, one found on the slope of Gobernador Knob is 1771 ± 5. The range of dates for architecturally mixed sites, i. e. hogan-tower-pueblito complexes, is from 1723 ± 10 (Cabresto Mesa Tower complex) to 1764 ± 20 (Muñoz Pueblito). Hence on the whole, contemporaneity is indicated for the "pure" Navaho and the mixed sites. There is some evidence, however, both from dendrochronology[33] and from the wider and numerically greater distribution of architecturally pure Navaho sites, that the Navahos were present in the area before the Puebloans came.

The time span for the sites reported from the Gobernador region (1656 ± 20 to 1771 ± 5) indicates an earlier occupation here than at Big Bead Mesa (1745–1812), although there is some overlapping. In the former area the Pueblo elements, as exemplified by pottery and architecture, are distinct and clearly identifiable, whereas the culture represented at Big Bead is primarily Navaho, with some Puebloid traits fairly well integrated.[34] Navaho hogans from the Upper Blanco and Largo Canyons have yielded dates from 1735 to 1777,[35] so they fall within both the Big Bead and Gobernador occupation periods but appear to be contemporaneous only with the latter part of the Gobernador period. Three dates from hogans near the Spider Rock Overlook in Canyon de Chelly, all from the latter half of the eighteenth century, indicate a contemporaneous Navaho occupation to the west.[36]

SUMMARY AND CONCLUSION

The Gobernador area in north-central New Mexico reveals an interesting chapter in Navaho history for the century roughly from 1670 to 1770. A cursory survey of the area revealed 273 hogans and twenty sweat houses of typical Navaho character. Nineteen hogans were excavated. Pueblitos and tower-pueblitos were found in close and direct

[31] Hall, 1944, p. 100, reports finding a hogan site in the Gobernador region with a date of 1541 ± 20. [32] See above and fn. 27.

[33] Cf. the 1656 ± 20 date noted above, and the date of 1541 ± 20 reported in Hall, 1944, p. 100. [34] Keur, 1941, pp. 2, 71. [35] Farmer, 1942, p. 71.

[36] Hurt, 1942, p. 98.

association with some hogan groups. Of the twenty-six located, two were excavated. Pottery and artifacts from the Navaho and puebloid sites are so similar in character that intimacy of the inhabitants is indicated. Dendrochronology establishes contemporaneity of the architecturally distinct sites.

The ceramic situation reveals an interesting combination of typical Navaho conical-bottomed, unpainted cooking pots; typical Puebloid wares of the seventeenth and eighteenth centuries, such as Ashiwi, Ogapoge, and Puname polychromes, and Kotyiti glaze polychrome; and the ware known as Gobernador polychrome, presumably Navaho-made but Pueblo inspired. One hogan group in Pueblito Canyon failed to show any painted ware whatsoever.[37] The glaze polychrome did not appear in association with any hogan sites but occurred sparsely only at the pueblitos. Judging from the large quantity of potsherds, the variety of wares, and their generally excellent quality, this was a period of ceramic florescence for the Navahos, who were inspired, no doubt, by their skilled and versatile Pueblo neighbors.

Stone artifacts show the usual heterogeneity in material, workmanship, and form.

Maize was cultivated, and hunting was engaged in. No evidence of sheep or goats was found, but the horse was known. The arts of spinning and weaving were practiced. Ceremonialism of a typical Navaho pattern is indicated by the presence of twenty sweat houses. Other ceremonial paraphernalia include a fragment of pipe which may have served in Antelope Corral Way. Evidence of Spanish contact is to be found in the presence of such articles as an iron axe-head and a copper button, and of such an architectural feature as the hooded fireplace.

The sites in the Gobernador area differ from all other eighteenth century Navaho sites investigated to date in the close association of hogans with pueblitos. Both house types clearly maintain their identity and the situation suggests either initial impact or temporary union. The location and character of many sites is defensive. Since many rebellious Puebloans fled north to escape Spanish reprisals at the end of the seventeenth century, as recorded in the early chronicles,[38] this is, in all likelihood, a refuge area, a place where the uprooted Puebloans joined the erstwhile hostile Navahos to hide out against a common foe. It seems probable that the Navahos inhabited the region before the coming of puebloan refugees. This is indicated by the greater number and wider distribution of hogans, in contrast to the sparser, more concentrated puebloan structures, and also by the presence of hogan groups completely unassociated with puebloans architecturally and even ce-

[37] With the exception of a single Jemez Black-on-white sherd.

[38] Cf. Twitchell, 1911–1917, Vol. 1, p. 412.

ramically. The situation suggests a rather concentrated and fairly brief Pueblo overlay on a Navaho pattern. The Navahos may also have remained in the area after the Puebloans returned south, although the dendrochronological evidence afforded by this study offers no proof. Future work may well serve more clearly to define pre- and post-refugee Navaho periods.

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CLUES TO THE CHRONOLOGY OF COASTAL NEW YORK

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THE region under consideration comprises the coastal portion of New York State east of the Hudson River, including Manhattan Island, Long Island, and southern Westchester County (Map, Fig. 4). The archaeological sites consist of shell middens along the tidal waterways. Although construction work coincident with the expansion of New York City has destroyed many of them and the rest are at least partially disturbed, sufficient material has been obtained for the purpose of this analysis. An attempt is made to establish a chronology of ceramic traits based upon sherds excavated by the writer and his associates as members of the Committee on American Anthropology of the Flushing (New York) Historical Society. Additional data were obtained from a study of collections made by Harrington for the American Museum of Natural History. Consideration of the non-ceramic material is beyond the scope of this paper and must await further study.

According to Hodge,[1] the region was inhabited into historic times by groups of Algonkian linguistic affiliation. Long Island was occupied by thirteen ethnic divisions known collectively as the Metoac. Intrusions by the Iroquois, Narraganset, and Pequot also occurred. During the seventeenth century the aboriginal population declined sharply and the culture quickly disintegrated under the impact of European colonization. Few sites yielding objects of European origin have been found. The region is known archaeologically from the works of Harrington, Parker, and Skinner listed in the bibliography. Ritchie[2] interpreted the published data and formulated the Orient, the "Early," and the "Late" foci of the Coastal aspect of the Northeastern phase of the Woodland pattern for Long Island and the adjacent mainland. Since the writer is dealing solely with certain ceramic traits, the midwestern taxonomic system[3] will not be employed.

All of the excavations carried out by the writer have been on a small scale, consisting of test trenches and the investigation of pits and other features exposed in road cuts and areas where the top soil had been removed by building operations. Sites usually consist of thin midden deposits rarely more than six inches thick, composed of broken shells mixed with stained earth, fire-cracked stones, chips of quartz, animal bones, and charcoal. Artifacts are more abundant in the pits, which often extend to a depth of five feet below the bottom of the midden. Pottery is abundant; artifacts of stone and bone are relatively scarce.

[1] Hodge, 1907, p. 851.
[2] Ritchie, 1938, pp. 103–106.
[3] McKern, 1939.

Pottery, as in other areas, seems to offer the best criteria for use in establishing a time scale which may be employed as a chronological guide in working with total trait inventories. Owing to the lack of stratigraphic evidence, the collections are treated without regard to their vertical and horizontal provenience within the sites. The present objective is to determine the relationship of the sites in the broadest terms, and only the most obvious ceramic traits are utilized. Temper, surface finish, decoration, and rim shape serve as the basis for comparisons. In Figure 4, the heading "Decorative Techniques" includes surface finish. No distinction has been made between body sherds and rim sherds in computing the percentages. The eight sites on Long Island listed in Figure 4 are used to establish the time scale. Other sites located on the map are used for comparative purposes.

Considering the collections as a whole, both grit and shell temper are present. "Grit temper" is synonymous with "mineral temper" as employed by Byers and Johnson,[4] and is used to denote the inclusion of any granular aplastic other than particles of shell. The rocks found in the region are of heterogeneous composition, and the occurrence of a varied assortment of minerals in the paste would indicate that the fire-cracked stones so common in the refuse were crushed to obtain a tempering material. Shell-tempered sherds often contain traces of the same mineral aplastic described above, but the particles of shell usually outnumber them. Scallop shells (*Pecten irradians*) seem to have been used more than any other shell. The paste ranges from coarse to medium in texture and from granular to slightly laminated in structure. Coil fractures are common, and fragments of fired clay in the form of cylindrical ropes have been found. Accurate tests of the hardness of the paste have not been made, but the sherds seem to be about "medium."

The interior surface is commonly smooth, but striations often occur and range from faint wiping marks to parallel grooves which seem to have been made by scraping the clay with a scallop shell. Some sites yield sherds with cord impressions covering the entire interior surface. The exterior surface is usually either marked with the impressions of a cord-wrapped paddle (Pl. IX, *17*) or left plain. Some sherds bear the impressions of plaited textiles or, more rarely, of nets. Wiped, brushed, or otherwise striated surfaces are of minor importance. The surface treatment sometimes extends to the lip, in which case no further ornamentation occurs. Usually, however, the treatment terminates below the rim, which bears a stamped or incised decoration.

Incising varies from crudely trailed lines to well-executed fine ones (Pl. IX, *1–3*, *6*, *13*, *15*, *16*). Stamping falls under three headings: cord-

[4] Byers and Johnson, 1940, pp. 54–59.

wrapped-stick (Pl. IX, *11*, *14*), dentate (Pl. IX, *9*), and scallop-shell (Pl. IX, *4*, *7*, *12*). As the name implies, cord-wrapped-stick stamping seems to have been accomplished by impressing in the wet clay a length of stick wrapped from one end to the other with a spiral of cord. It is probable that this stamping was sometimes done with the edge of the cord-wrapped paddle which seems to have been used to cover the bodies of the vessels with closely spaced cord marks. At times it is difficult to distinguish the cord-wrapped-stick stamping from that of a serrated or dentate stamp. At the Baker Hill site (Fig. 4, *7*), dentate-stamped sherds were found in close association with a circular shell gorget, concavo-convex in profile, fashioned from a piece of *Busycon* shell (Pl. IX, *5*). This artifact is $2\frac{3}{8}''$ in diameter and is perforated at the center. The edge is decorated with serrations approximately $\frac{1}{8}''$ apart. When the edge of the specimen is impressed in soft clay and rolled in a straight line the result duplicates the dentate stamping found on the pottery (Pl. IX, *8*, *9*). The gorget resembles the hafted roulette postulated by Holmes;[5] however, the curvature of the Baker Hill specimen would not permit the execution of clear impressions if it were used with a handle inserted in the perforation. Another roulette or dentate stamp is described by Wedel and Trowbridge.[6] This specimen, found in Wyandotte County, Kansas, consists of the base of a deer antler with a notched edge. Dentate stamping on the pottery of the New York tidewater area usually takes the form of closely spaced horizontal rows encircling the rim. One example of zigzag rocker stamping occurred at the Matinecock Point site (Fig. 4, *4*). Scallop-shell stamping seems to have been accomplished by impressing the edge of a *Pecten* shell into the clay in much the same manner as in dentate stamping. Experiments indicate that a fine wavy line results when the shell is held perpendicular to the surface of the clay (Pl. IX, *7*). The same technique seems to have been used in decorating pottery of the Crooks Stamped type of the Marksville period in Louisiana.[7] When the shell is held at an angle to the surface an impression of the fluted back of the shell also shows (Pl. IX, *4*, *12*). In Figure 4 all of the stamped types have been merged.

Vessels take the form of elongate jars with bottoms ranging from pointed to rounded. Three types of rims occur: straight, flaring, and collared. Pointed bottoms predominate on vessels with straight and flaring rims, while the collared-rim vessels are characterized by rounded bottoms and slightly more globular bodies. Straight rims may be divided into those which are simply a continuation of the wall of the vessel (Pl. IX, *17*) and those which rise vertically from a constriction above the

[5] Holmes, 1903, Fig. 44. [6] Wedel and Trowbridge, 1940.
[7] Ford and Willey, 1940, pp. 81, 82, Figs. 38, 39.

shoulder. Some straight rims slope inward. Flaring rims curve outward from a constricted area above the shoulder (Pl. IX, *6*, *13*, *14*, *16*). The use of the term "collared" here is more inclusive than is usual and designates all rims having a marked exterior thickening as well as those which curve inward above an outward flare in the shape of the letter S. (Pl. IX, *1–4*, *7*, *10–12*). The less pronounced, or incipient, collars generally bear stamped decoration, while the true collars are decorated with incised lines forming designs common to the Iroquois tradition. Skinner[8] called incipient collars with stamped decoration "Sub-Iroquois" and true collars with incised designs "Iroquois." Ritchie[9] sees the influence of Castle Creek in the former and Iroquois in the latter.

The pottery from each site was sorted on the basis of surface finish, decoration, and temper, and notes were made on the occurrence of the various rim and bottom types. The percentage relationships of the ceramic traits within each site were then computed. The sites were then arranged in a series based upon the degree of similarity found in the percentages. When this was done, it was found that the sites yielding collared, flaring, and straight rims fell at one end of the series, and those which lacked collars at the other. In the chart (Fig. 4) the percentages have been accurately plotted and the cones have not been smoothed for the purpose of symmetry.

The area is limited geographically, all of the sites falling within an area of two hundred square miles (Fig. 4). Hence, the writer feels justified in assuming that the ceramic differences are due primarily to temporal factors. The series has been divided into two divisions designated as Clasons Point and Grantville. On the basis of the following data, these divisions seem comparable to Ritchie's "Late" and "Early" foci and to the Rosenkrans Ferry and Red Valley foci of Cross.[10]

THE CLASONS POINT PERIOD

The Dosoris Pond site (Fig. 4, *8*), located near Glen Cove, was excavated by Harrington[11] and the material stored at the American Museum of Natural History. The present collection of 250 representative sherds shows the presence of straight, flaring, and collared rims. Collars vary from incipient to pronounced and are predominantly incised. The sample collection shows 46 per cent grit temper, as compared to 54 per cent shell temper. The writer is indebted to Dr. N. C. Nelson for the use of his notes on the original collection. Nelson found 756 indeterminate sherds and 2265 which he classified as follows: cord-marked, 12.2 per cent; textile-marked, 22 per cent; plain, 45.1 per cent;

[8] Skinner, 1919, pp. 67–70, 106–112. [9] Ritchie, 1938, p. 106.
[10] Cross, 1941, pp. 210–221. [11] Parker, 1920, pp. 346–348.

striated, 6.1 per cent; punctated, 0.1 per cent; incised, 12.9 per cent; stamped (cord-wrapped-stick, dentate, and scallop-shell), 1.6 per cent. The writer would have placed the major part of the textile-impressed sherds under the heading of cord-marked, since many of the sample sherds seem to have been impressed with irregularly crossed cords. Other sherds appear to belong to the cord-wrapped-stick stamped category. Some sherds showing the impressions of plaited fabric are present. Throughout the remainder of the analysis, the writer agrees with Nelson's classifications.

The Baker Hill site (Fig. 4, *7*), located on a small stream in central Great Neck, produced approximately 2800 sherds, of which 1782 were of suitable size and preservation to permit a complete analysis. The entire collection shows 80 per cent grit temper and 20 per cent shell. Reminiscent of the typically Woodland conoidal bottoms are several sherds, each of which has a small, thickened point applied to a rounded bottom. Similar sherds were found at the Clasons Point site (Fig. 4, *13*).[12] Straight, flaring, and collared rims occur (Pl. IX, *3*, *4*, *6*). Collared rims of the incipient and pronounced varieties are most common. Incising is limited to the pronounced collars and to a few flaring rims. The incipient collars bear scallop-shell-stamped decoration. Surface treatment occurs as follows: cord-marked, 34.8 per cent; fabric-marked, 0.4 per cent; plain, 46.8 per cent; striated, 0.6 per cent; punctated, 0.5 per cent; incised, 10.2 per cent; cord-wrapped-stick-stamped, 0.2 per cent; dentate-stamped, 1.0 per cent; scallop-shell-stamped; 5.5 per cent.

The Aqueduct site (Fig. 4, *6*) is located near Hawtree Creek, which flows into Jamaica Bay. Of the 260 sherds recovered, 93 per cent are grit-tempered and the remaining 7 per cent are shell-tempered. One basal sherd suggests an elongate jar with a rounded bottom. Straight, flaring, and collared rims occur. The collars are of the incipient type and bear stamped decoration (Pl. IX, *7*, *10*). Surface treatment: cord-marked, 52.7 per cent; fabric-marked, 2.3 per cent; plain, 29.3 per cent; punctated, 0.8 per cent; incised, 7.7 per cent; cord-wrapped-stick-stamped, 4.6 per cent; scallop-shell-stamped, 1.2 per cent; dentate-stamped (?), 0.7 per cent.

The Port Washington site (Fig. 4, site 5) is located on Manhasset Bay, approximately three hundred yards southeast of the one excavated by Harrington.[13] The excavation of ten refuse-filled pits produced 430 sherds, of which 82 per cent are grit-tempered and 18 per cent are shell-tempered. Pointed bottoms are present together with straight, flaring and collared rims. All of the collared rims bear stamped decoration,

[12] Skinner, 1919, pp. 103–112, Figs., 8–14, Pls. 12, 13.

[13] Harrington, 1909, pp. 176–177.

(Pl. IX, *11–13*). Surface treatment: cord-marked, 57.2 per cent; fabric-marked, 2.3 per cent; plain, 23.9 per cent; striated, 3.3 per cent; punctated, 0.5 per cent; incised, 6.3 per cent; cord-wrapped-stick-stamped, 1.3 per cent; dentate-stamped, 2.1 per cent; scallop-shell-stamped, 3.0 per cent. Nelson's analysis of the 1559 sherds collected by Harrington shows the following percentages: cord-marked, 50.5; fabric-marked, 1.2; plain, 26.0; striated, 4.0; punctated, 0.1; incised, 8.6; stamped (cord-wrapped-stick, dentate, and scallop-shell), 9.4. Grit and shell temper occur and the rims are straight, flaring, and collared. There is little doubt as to the close cultural relationship of the two sites.

THE GRANTVILLE PERIOD

The Matinecock Point site (Fig. 4, *4*) is located on a small stream leading into a cove on the west side of Oyster Bay. It was excavated by Harrington.[14] The present collection of 305 type specimens shows 96 per cent grit temper, as opposed to 4 per cent shell. The rims are of the straight and flaring types. Nelson found the original collection to consist of 1660 sherds classed as indeterminate and 1951 which he classified as follows (on a percentage basis): cord-marked, 57.6; fabric-marked, 1.5; plain, 25.0; striated, 1.0; incised, 4.4; punctated, 0.3; stamped (cord-wrapped-stick, dentate, and scallop-shell), 9.2. The present sample collection includes one cord-wrapped-stick-stamped sherd, 88 dentate-stamped sherds, and 3 scallop-shell-stamped sherds. Some of the dentate-stamped sherds have indistinct impressions and may belong to the cord-wrapped-stick category.

The North Beach site (Fig. 4, *3*) is located on the west side of Flushing Bay, near La Guardia Airport. Test excavations yielded 420 sherds, one of which is shell tempered. Straight rims and some slightly flaring ones were found (Pl. IX, *15–17*). Surface finish: cord-marked, 67.6 per cent; plain, 21.7 per cent; striated, 1.0 per cent; incised, 3.3 per cent; cord-wrapped-stick-stamped, 9.7 per cent; dentate-stamped, 0.3 per cent. The cord-marked sherds are characterized by fine criss cross impressions, and the interior surfaces are covered with deep horizontal cord marks with cord-wrapped-stick impressions superimposed upon them. It would appear that the interior of the vessel had been supported by a cord-wrapped implement while the outside was being beaten with a cord-wrapped paddle. Impressions resembling cord-wrapped-stick stamping could result from accidentally striking the walls with the edge of the implement used inside the vessel.

The Wilkins site (Fig. 4, *2*) is located at Whitestone, near the head of a small cove filled with salt marsh. Grading operations had removed the humus and exposed concentrations of shells and stained earth mark-

[14] Parker, 1920, pp. 344–346.

ing the sites of refuse pits. The pits produced 826 sherds, one of which is shell-tempered. Flaring rims predominate over straight rims, and pointed bottoms seem to have been the rule. Surface treatment: cord-marked, 76.5 per cent; plain, 6.8 per cent; incised, 0.1 per cent; cord-wrapped-stick-stamped, 14.7 per cent; dentate-stamped, 0.3 per cent. The most typical rim sherd from the Wilkins site has a flaring rim with a flat lip and horizontal cord-wrapped-stick stamping (Plate IX, *14*). One rim bearing raised nodes with three punctations on each was found. It resembles the "human face" motif of the Iroquois and is similar to one found by Skinner[15] at Bowmans Brook on Staten Island. Whether the pit in which this sherd occurred was later than the others could not be determined, owing to the removal of the humus. The sherd has a straight rim rising from a constriction above the shoulder and is decorated with incised lines arranged in opposed diagonals between the nodes which bear the punctations.

The Grantville site (Fig. 4, *1*) is located on the east side of Flushing Bay, approximately two miles southeast of the Wilkins site. The collection was made on the top of a small promontory at the entrance to the cove mentioned above, by the writer's colleague, M. C. Schreiner. There had been considerable disturbance through the activities of local collectors interested in the bannerstones which the site had produced. This site is worthy of note, not only because of the pottery described below, but also because it is the only site in the series which has, to the writer's knowledge, produced any bannerstones. The pottery consists of 1028 sherds, grit-tempered and seemingly belonging to five distinct vessels, all of which are characterized by elongate bodies, pointed bottoms, flaring rims, cord-marked bodies, and cord-wrapped-stick-stamped rims. It is similar in most details to the pottery of the Wilkins site (Pl. IX, *14*), but is generally coarser and thicker. Ninety-five per cent of the sherds are cord-marked, and 5 per cent are stamped with a cord-wrapped stick. The writer is aware that the above percentages reflect little more than the relationship of the quantities of body sherds and of rim sherds, but the fact that only cord-marked and cord-wrapped-stick-stamped sherds occur in this site is significant when considered in terms of the data from the other sites.

COMPARATIVE DATA

As stated earlier, documented historic sites and undocumented sites containing objects of European origin are relatively scarce in the area under consideration. The few sites that can be attributed to the period of European colonization have yielded pottery characterized by an abundance of shell temper, well-developed collared rims covered

[15] Skinner, 1909. Fig. 3, *e*.

with incised designs, and a predominance of plain body sherds. Among these sites is the Clasons Point site[16] (Fig. 4, *13*) in Westchester county, a site which closely resembles the Baker Hill site in pottery content. The Cutchogue site near Mattituck on Peconic Bay, Long Island, partially excavated by the writer's colleague, Ralph Solecki, has yielded a considerable quantity of European clay-pipe stems and metal objects in association with pottery which is entirely shell-tempered. The vessels have large globular bodies with rounded bottoms, constricted necks, and high pronounced collars with castellations on the lip. The rims are covered with incised designs, and the bodies are left plain (Pl. IX, *1*, *2*). Similar vessels were found by Saville[17] in an historic Montauk cemetery at Easthampton. The vessels illustrated by him are virtually identical to a type occurring at the Cutchogue site (Pl. IX, *2*). A shell heap adjacent to an aboriginal earthwork on Fort Neck near Massapequa (Fig. 4, *10*) has produced clay-pipe stems of European origin, metal objects, and shell-tempered pottery with collared rims and incised designs. The occurrence of globular vessels with pronounced collars, incised decoration, and plain bodies in the Northeast has been taken as evidence for the presence of, or contact with the Iroquoian tribes. Parker[18] has adequately described the typical Iroquoian forms. Other sites, such as the Port Washington and Aqueduct sites (Fig. 4, *5*, *6*), produce incipient collars with stamped decoration on elongate globular vessels with rounded and pointed bottoms and with the bodies characteristically cord-marked. This complex is related to the Castle Creek focus of the Owasco aspect as defined by Ritchie,[19] who interprets it as an influence of the Iroquois. Sites in upper New York State assigned to the Iroquois aspect or showing its influence have been classed as late prehistoric and historic. It would seem justified to place the Long Island sites showing Iroquoian- and Castle Creek-like traits in a similar chronological position. The Clasons Point period is formulated on the basis of the above site analyses and comparative data.

Reference to the chart (Fig. 4) and to the detailed description of the pottery found in the four sites assigned to the Clasons Point period will indicate that for western Long Island the period is characterized by the presence of collared, flaring, and straight rims, and by a predominance, or at least a marked presence, of shell temper. Plain sherds often predominate over cord-marked, and incised sherds predominate over, or are equal in number to, stamped sherds. The incised designs occur largely on pronounced collars and take the form of opposed diagonal lines in the Iroquoian tradition (Pl. IX, *3*). Stamped designs occur on

[16] Skinner, 1919. [17] Saville, 1920, Fig. 1.

[18] Parker, 1920, pp. 110–113, and plates throughout text.

[19] Ritchie, 1934, pp. 43–51.

all rim shapes, but they are rarely found on the pronounced collars. Characteristic of this period are rims of the incipient collar variety which are decorated with the impressions of a scallop shell in opposed diagonal lines following patterns similar to those of the incised technique on the pronounced collars. Although stamping as a decorative technique seems to be on the way out in the Clasons Point period, sherds of the scallop-shell-stamped variety are diagnostic when in combination with collared rims. (Pl. IX, *4, 7, 12*). Punctated sherds persist throughout the period, but are relatively scarce. Fabric-marked, striated, cord-wrapped-stick-stamped, and dentate-stamped sherds are present in erratic proportions and seem to be of little diagnostic value. In view of the presence of similar complexes at other sites containing undisputed evidence of European contact, it would appear that the Clasons Point period extends from the historic period back to the late prehistoric, when Castle Creek and Iroquoian influences began to spread into the New York tidewater area.

Contrasting with the pottery of the Clasons Point period is that from sites which lack evidence of European contact and of influence from the Castle Creek focus and the Iroquois aspect. At the Throgs Neck or Weir Creek site, Skinner[20] found evidence of stratigraphy. In the earlier shell heap, pottery of the "Algonkian or archaic type" with pointed bottoms and grit temper was found. The later pits yielded pottery of the Clasons Point tradition. On Long Island, the group of sites differentiated from the Clasons Point period have been assigned to the tentative Grantville period, which may be further divided after more research has been done. The Grantville period covers the "Early" focus of Ritchie,[21] and, as tentatively defined, includes all ceramic horizons on western Long Island which lack any degree of influence from the Castle Creek focus and the Iroquois aspect. The pottery is characterized by the predominance of grit temper and the rare occurrence of shell temper. The vessels are large pointed-bottomed jars with straight or flaring rims, and the bodies are covered with the impressions of a cord-wrapped paddle. The rims are characteristically decorated with the impressions of a cord-wrapped stick or the edge of a cord-wrapped paddle. Dentate stamping is also present. Scallop-shell stamping is rare or entirely absent. Punctating is present but rare. Incising occurs, but the designs differ somewhat from those found in the Clasons Point period. Fabric marking, striations, and other modifications of the surface occur sporadically and seem to be of little diagnostic value. Plain body sherds occur, but are not as abundant as in the later period. The Grantville, Wilkins, North Beach, and Matinecock Point sites are typical of the Grantville period (Fig. 4).

[20] Skinner, 1919, pp. 54, 70–74.

[21] Ritchie, 1938, p. 104.

There is evidence for a slightly different sequence of ceramic traits on the eastern end of Long Island. Interpretation, however, must await a study of private collections and the excavation of certain key sites in that region. At present it would appear that shell temper predominated on the eastern end of the island before any appreciable influence of the Castle Creek focus and the Iroquois aspect was felt. The writer examined the collection from the shell heap excavated by Harrington,[22] who interpreted it as an historic site occupied by the Shinnecock. Over 90 per cent of the pottery is shell-tempered. Contrary to Harrington's statement that there was no suggestion of Iroquoian forms, the writer found several sherds suggesting the incipient collars with scallop-shell-stamped decoration arranged in the form of opposed diagonals typical of the Clasons Point period sites under Castle Creek and Iroquois influence. The remainder of the sherds indicate a ceramic tradition in many ways divergent from that of the western end of the island. The vessels follow the simple form of the Grantville period, but the surfaces are striated as if they had been wiped with grass or scraped with the edge of a scallop shell. Cord-marked sherds are rare, and rims are incised with roughly executed lines. Other sites from which small collections have been obtained seem to reflect a similar ceramic complex. Some produce shell-tempered sherds and others grit. The general impression is that shell temper is more prevalent on the eastern end of Long Island, regardless of the chronological position of the site. At the Jones Pond site in Rhode Island,[23] shell-tempered sherds were more prevalent in the upper layer of shells. In Westchester, New York, some late sites show a predominance of shell temper, while others run to 90 per cent grit. The Finch and Helickers rock shelters excavated by Harrington[24] produced large collections of sherds which the writer has studied. Helickers Cave and the top layer in the Finch Rock House contained Clasons Point period pottery with more than 20 per cent shell temper. Another site near Pelham Bay (Fig. 4, *11*) contained Clasons Point pottery but very little shell temper. The Staten Island sites described by Skinner[25] contained some Clasons Point pottery but little shell temper. Cross[26] found shell temper to be most prevalent in northern New Jersey and in the Rosenkrans Ferry focus. Associated with abundant shell temper are the essential traits of the Clasons Point period pottery: plain-surfaced, globular-bodied vessels with castellated collars bearing incised decoration. Cross equates this complex with Ritchie's[27] "Late" focus of the Coastal aspect; she equates the Red

[22] Harrington, 1924. [23] Brown, 1939, p. 22.
[24] Harrington, 1909, pp. 125–136. [25] Skinner, 1909, pp. 23–26, Figs. 2–5.
[26] Cross, 1941, p. 181. [27] Ritchie, 1938, pp. 105, 106.

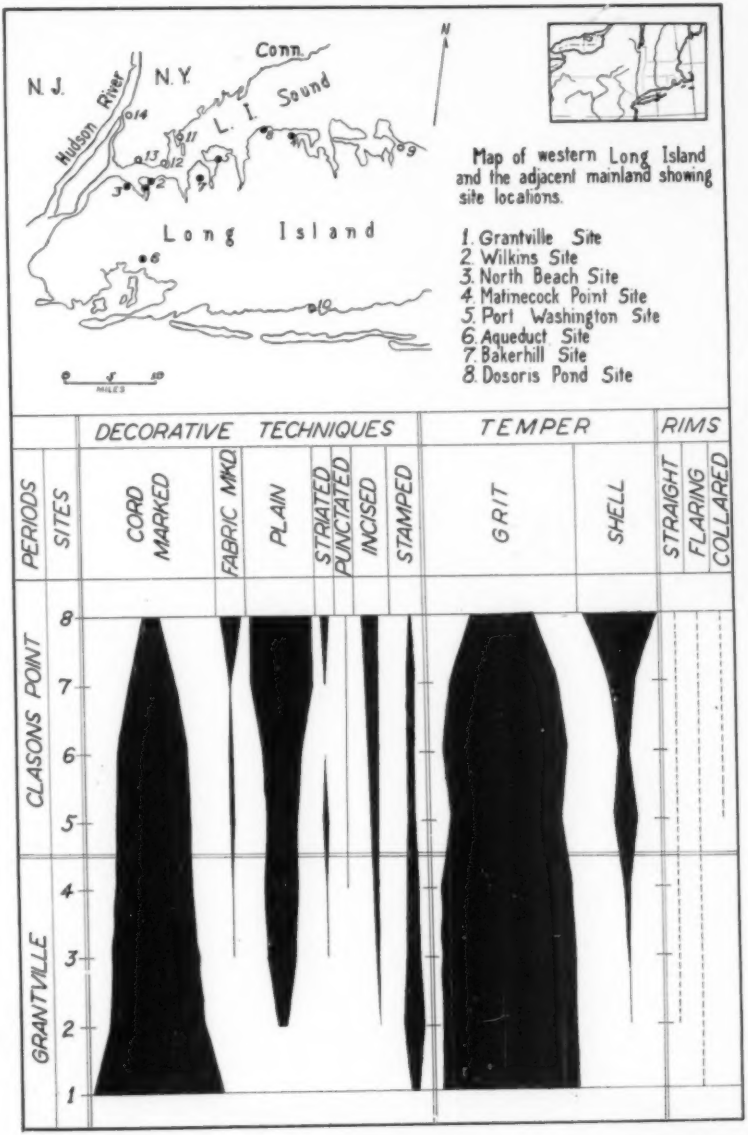
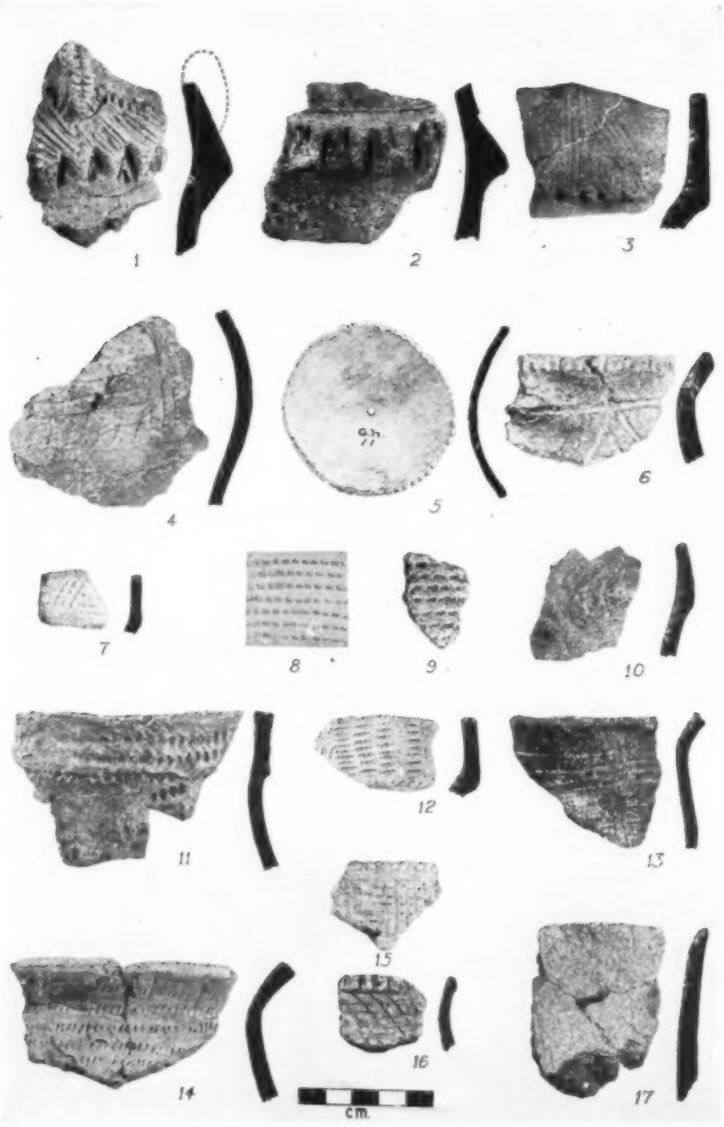


FIG. 4.—The geographical and temporal relationships of sites on western Long Island and a comparative analysis of their ceramics.



Pottery from Long Island. See facing page for identification of specimens

Valley focus, which is similar to the Grantville period, with the "Early" focus of the same aspect.

SUMMARY AND CONCLUSIONS

It seems evident that the pottery of southeastern New York may justifiably be divided into two divisions reflecting two periods of cultural history, the one developing out of the other and in turn being subjected to alien influences. The earlier period is the Grantville, which seems to be purely Woodland in character. The later period is the Clasons Point, which grew out of the Grantville period and retained its Woodland character while being influenced by the Mississippi pattern, at first indirectly by way of the Castle Creek focus of the Owasco aspect, Northeastern phase, Woodland pattern, and finally directly by way of the Iroquois aspect, Upper phase, Mississippi pattern.

If the order in which the sites are placed in the series may be taken as an accurate index to their true chronological relationships to one another, it would be logical to assume that there was no cultural discontinuity in the limited region involved. It should be noted that the basic traits of the Grantville ceramic complex continue into the Clasons Point period in a decreasing ratio. The graph seems to measure the increasing degree of influence from the Iroquois aspect through time, at first from the Castle Creek focus and finally from the Iroquoian tribes themselves.

The time scale established should serve as a guide in studying the non-ceramic traits. When this has been done, it may be possible to break the periods down into smaller divisions and to demonstrate clearly the character and relationships of the cultural complexes. Especially to be desired is an analysis of the material from an undisputed historic site and a study of the non-ceramic traits with a view toward linking the ceramic manifestations with the apparently non-ceramic Orient focus of the Coastal aspect described briefly by Ritchie.[28]

[28] Ritchie, 1938, pp. 104, 105.

LEGEND PLATE IX

Pottery from Long Island, New York. *Clasons Point period: 1, 2,* collared and incised rims, Cutchogue site, eastern Long Island; *3, 4,* collared rims with incising and scallop-shell stamping, Baker Hill site; *5, 8, 9,* gorget, laboratory impression of gorget, and dentate-stamped sherd, Baker Hill site; *6,* flaring incised rim, Baker Hill site; *7, 10,* collared rims with scallop-shell stamping and cord marking, Aqueduct site; *11, 12,* collared rims stamped with cord-wrapped stick and scallop shell, Port Washington site; *13,* flaring incised rim, Port Washington site. *Grantville period: 14,* flaring rim stamped with cord-wrapped stick, Wilkins site; *15,* incised sherd, North Beach site; *16,* flaring, incised, cord-marked rim, North Beach site; *17,* straight rim with cord marking inside and out, North Beach site. (Right side of profile shows outside contour of vessel.)

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Great Neck, New York
July, 1942

FACTS AND COMMENTS

RE ARCHAEOLOGICAL TOOLS AND JOBS

Dr. McKern's recent remarks on "Taxonomy and the Direct Historical Approach"[1] serve, though no doubt unintentionally, as a red herring to my plea for the importance of the direct historical approach.[2] Since much attention has been devoted recently to the matter of research tools in anthropology and the social sciences, I should like to comment briefly on what seems to me increasing confusion of tools, methods, approaches, and theories in archaeology. For I do not conceive the direct historical approach to be a tool. And I am not wholly clear how the taxonomic method is a tool adapted to further a historical objective.

There are two general levels or types of procedure in archaeology: collecting and interpreting data. Much is said about the permanent solidity of sacred fact and the ephemeral nature of theory. But facts are totally without significance and may even be said not to exist without reference to theory. It is wholly impossible to collect bare facts; perhaps the nearest thing to them is the hodge-podge of specimens that used to clutter museums. It is equally impossible merely to give significant order to facts without reference to some theory or problem. For, unless some theory lay behind research—something fairly definite that we wish to find out—it would not matter what materials were collected or how the collecting was done, nor whether they were classified according to size, beauty, scarcity, or any of a hundred other characteristics. A field technique, such as a surface survey or stratigraphic dig, and a classificatory procedure, such as the taxonomic method, seriation, or sequential ordering, has meaning only with reference to problems and theories.

McKern seems to be in complete agreement that to reconstruct histories is archaeology's main job. It is this objective that has given significance to archaeological materials, making them meaningful data instead of random curiosities. The desire to arrange data chronologically and spatially has led to the development of tools specifically designed for the job: surface surveys and excavations to establish typology and distributions; stratigraphy; seriation; and other methods of gathering and ordering data. I think it fair to ask in what manner historical reconstruction can be derived from taxonomic classifications. It is not obvious that the mere orderly arrangement of data in categories of similarity is a necessary or even useful step toward history. When classification employs categories comparable to those of biology, it may, in fact, actually obscure history. The dangers of introducing biological concepts to cultural data has been recognized for years.[3] Biological types fall into genera, families, and phyla that do not and cannot cross with one another, whereas associations of cultural elements continually fall apart and recombine in all sort of ways.[4] To pigeonhole cultural data in categories analogous to those of biology may even misrepresent the facts of the case to some degree, because in this scheme a culture complex can only belong to one major division or pattern, and there is no way in which to indicate its relationship to other groups, with which it may share a majority of its traits.

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[1] AMERICAN ANTIQUITY, vol. 8, 1942, pp. 170–172.

[2] "The Direct Historical Approach to Archaeology," AMERICAN ANTIQUITY, Vol. 7, 1942, pp. 337–343.

[3] For an extremely valuable analysis of the similarities and differences between biological and cultural phenomena, I strongly recommend A. L. Kroeber, "Structure, Function, and Pattern in Biology and Anthropology," *Scientific Monthly*, Vol. 56, 1943, pp. 105–113.

[4] Element complexes which had demonstrable stability in time and space—often these are "patterns" in the ethnological sense—may be revealed by history; they are not comparable to the categories—"patterns," etc.—of the taxonomic scheme.

This weakness has been exposed in several concrete instances. Phillips, in a review of the archaeological survey of the Pickwick Basin,[5] has shown how taxonomic classification of data from shell mounds not only fails to serve as a tool for reconstructing their history, but actually runs counter to the history plainly revealed by stratigraphy; sequential and taxonomic classifications simply do not harmonize, for the latter has no place for the crossing-over of cultures of different patterns. In a review of Colton's attempt to combine the taxonomic scheme with an historical arrangement of cultures in the Southwest, I have pointed out[6] that pegging a culture to a single branch of a tree-like scheme obscures its relation to other branches, though its similarity to the latter may be almost as great. I know of no answer to this objection to the taxonomic method; nor do I see how it can be corrected, for this biological type of framework is the essential feature of the method. To allow for cultural blends would be to scrap the scheme and revert to a method of areal and sequential classification. Therefore, I must state frankly that, if the taxonomic method is conceived as a tool to further historical reconstruction, I fail to see that its adaptability for the job has been demonstrated. And I suspect that it is partly its very lack of suitability for attacking historical problems that has made it loom as an end in itself and thus divert attention from history.

The direct historical approach cannot be methodologically in conflict with the taxonomic method, as I am suspected of having intimated, because the former is in no sense a method. It is not something designed to derive history; it starts with the ready-made history contained in written documents. It should be regarded as a field of research —a broad, promising, and little exploited field that is rich in documented segments of history which have unique value. I recommend utilization of these data because the archaeology of the historic period is an excellent starting point for prehistoric sequences, especially where archaeological complexes now remain unfixed in time for want of stratigraphy or other reference points. I commend it in combination with ethnology and prehistoric archaeology as an essential source of information on culture change. In the Southwest, for example, what could give greater meaning to Pueblo development than knowledge of the three hundred years of the historic period gained through utilization of documents and excavation of historic sites? And yet the research money and effort spent on this period are only a fraction of those devoted to refining the minutiae of the older periods. The same applies to most areas.

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[5] AMERICAN ANTIQUITY, Vol. 7, 1942, pp. 197–201.
[6] AMERICAN ANTIQUITY, Vol. 6, pp. 366–367.

ARIKARA POTTERY MAKING

The following note regarding pottery-making may be of interest to archaeologists who are not already acquainted with it. It is an entry made by John Bradbury when he was at an Arikara village on the Missouri in May, 1810.

"I noticed over their fires much larger vessels of earthen-ware than any I had before seen, and was permitted to examine them. They were sufficiently hardened by the fire to cause them to emit a sonorous tone on being struck, and in all I observed impressions on the outside, seemingly made by wicker work. This led me to enquire of them by signs how they were made? when a squaw brought a basket, and took some clay, which she began to spread very evenly within it, shewing me at the same time that they were made in that way. From the shape of these vessels, they must be under the necessity of burning

the basket to disengage them, as they are wider at the bottom than at the top. I must here remark, that at the Great Salt Lick, or Saline, about twenty miles from the mouth of the Wabash, vast quantities of Indian earthenware are found, on which I have observed impressions exactly similar to those here mentioned."[1]

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[1] Reuben Gold Thwaites, ed., *Early Western Travels*, Cleveland, 1904, Vol. V, p. 169, fn.

"DRUM" BONES

On many sites in the Pease and Red river section of Wilbarger County, Texas, are found numerous "drum" bones of fish. They occur on the surface of camp sites, which are on sandy terrain along river banks or on the slopes of nearby sand dunes, along with the average run of artifacts, including flint projectile points, scrapers, manos, and potsherds. Other fish remains do not appear. The question which has interested the writer is whether these strange bones owe their presence on the sites to their inherent durability or to the attention and care accorded them by the Indians.

This area is noted for its Gaspergou or Drum fish. Within a cavity in the skull of this fish are located a pair of bones which the river folk term "drummers." A three pound fish will produce a pair the size of a ten-cent piece. One side is convex, the other side is an irregular plane. The pearly luster of these objects when they are first removed from the fish might have made them attractive for use as beads or other ornaments, while the peculiar designs which develop on the convex side as a result of weathering may have added to their value as charms. However, no evidence was found to indicate their use for any other specific purpose.

J. HENRY RAY
Vernon, Texas

COPIES OF VOLUME IV, NO. 1 WANTED

Recently we have been unable to fill orders for complete sets of AMERICAN ANTIQUITY because Volume IV, No. 1 (July, 1938) is now out of print. If any members have copies of this number which they care to dispose of, the Society would be glad to buy them. Please communicate with the Treasurer regarding any such numbers.

BOOK REVIEWS

The Ciboney Culture of Cayo Redondo, Cuba. CORNELIUS OSGOOD. (Yale University Publications in Anthropology No. 25, New Haven, 1942.)

Cayo Redondo was a simple, unstratified site in western Cuba, yielding the scanty and crude belongings of a simple people; but Dr. Osgood's report is far from simple. In fact, it seems a very large and luxuriant tree to grow from so small a root, unless we understand that it is frankly intended as a demonstration of method in writing such reports and an analysis of the mental processes involved.

Moreover, the pay dirt for the fact-seeking reader is there, if buried under a heavy overburden of words, and he can unearth what he wishes to know if he digs deep enough and keeps a dictionary at his elbow.

The demonstration and analysis are valuable in themselves also and well worth reading; in fact, they should be read by every archaeologist writing or planning to write a report.

The old-line practical archaeologist may shudder when he reads how the excavation was conducted with pick and shovel instead of with trowel and brush, and may wonder at the symbol used to represent "cactus" on the map. It looks like some species of agave, which, except that it has thorns and often thrives in arid places, has nothing in common with cactus. He may not agree with some of the interpretations, which, after all, are more or less a matter of opinion. But he will profit, none the less, from the reading of this paper.

However, your reviewer would have preferred to see the demonstration and analysis divorced from the factual report on Cayo Redondo and its conclusions—or at least entitled "The Study of a Cuban Archaeological Site: a Demonstration of Method." As it is, the most useful part of the contribution is sailing under false colors.

Before closing, let me pass on the choicest bit in the report—the last sentence:

"Thus, in retrospect, we can see an ancient proverb in the Carib dog charging down upon an Arawak cat slowly engaged in consuming the Ciboney mouse. Suddenly out of Europe came the savage bird of prey that gorged them all so quickly that they knew only the pain of being torn to death."

And that, may I add, is more truth than poetry as a word picture of the West Indies at the time of the Discovery.

M. R. HARRINGTON

The Archaeology of the Maniabon Hills, Cuba. IRVING ROUSE. (Yale University Publications in Anthropology No. 26, New Haven, 1942.)

This substantial paper, dealing with an important archaeological region in Cuba, is not a report on Rouse's excavations but a compilation of the results of previous Cuban research in the area, based on an intensive study of sites, collections, and records, and on interviews with archaeologists and collectors. To this the author has added his interpretations.

The paper covers the environment and presents the historical picture beginning with the arrival of Columbus, the conquest and settlement, the fate of the unfortunate Indians as serfs and in some cases slaves of the Spanish settlers, their near extinction, the freeing of the survivors, and their absorption into the population.

Next comes the history of the archaeological research, naming the workers and outlining their activities, followed by a description of sites and specimens—some 83 pages—which takes up the greater part of the report.

Next we find a section of "Summary and Conclusions," in which the sites are sepa-

rated into Ciboney and Sub-Taino, whose traits are listed, the Ciboney being the primitive non-agricultural people of Cuba, and the Sub-Taino a much more advanced agricultural group. The last section of the paper is entitled "Relationships with Surrounding Areas"; this is followed by a useful glossary of terms used, a bibliography, an index of sites, eight plates (most of which are satisfactory), and a folding map.

To the reviewer, certain facts stand out after reading this paper: that the Ciboney had but a sparse population in the Maniabon Hills; that the more advanced people who followed them may be classified as Sub-Taino, rather than Taino proper; that they were not recent migrants from Hispaniola, but had occupied the region for centuries and developed a comparatively dense population. Very curious is the fact that artifacts of Ciboney type are reported from (sub) Taino sites, whereas, although their presence would be expected, Sub-Taino objects do not occur in Ciboney middens. Rouse interprets this to mean that certain Ciboney traits were borrowed and perpetuated by the incoming Sub-Taino. This reviewer, while accepting the possibility, still feels that there may be some other explanation; he cannot be convinced until he sees with his own eyes Ciboney shell gouges in various stages of manufacture in some Sub-Taino midden—or at least a reliable eye-witness account of such.

Most of the Ciboney artifacts are so simple and so universally Indian that their hammerstones, hammer-grinders, mortars, crude metates or milling stones, hand axes, and flake knives might (if one did not examine the materials too critically) be exhibited in collections from many parts of the United States, from the Atlantic to the Pacific, without exciting comment; even the shell vessel—a conch shell with the insides removed —occurs in the mounds of the Mississippi Valley. That they should occur on Sub-Taino sites is not astonishing. But the shell gouge is truly a Ciboney product; its occurrence outside of Cuba seems to be very limited and sporadic.

Rouse's paper is so satisfactory, on the whole, that the reviewer has little fault to find. There are always such trifles as slips in proof-reading. One of these is rather amusing; we are told on page 17 that Columbus landed in Cuba October 28, *1942*! The reviewer regrets, however, that the account of Rouse's excavations was omitted, reserved, he says, for publication at some later date. Surely it should have been included with the other items constituting his study of "The Archeology of the Maniabon Hills, Cuba."

M. R. HARRINGTON

Pima and Papago Indian Agriculture. EDWARD F. CASTETTER and WILLIS H. BELL. (Inter-Americana Studies I. University of New Mexico Press, 1942.)

This is a book of 245 pages, attractively printed and bound. It is the first of an "Inter-Americana Series, dealing with Latin America and cultural relations in the Southwest of the United States." There are ten chapters, a preface, and a foreword by Joaquín Ortega, the general editor of the series. The book closes with a bibliography of 134 titles and a comprehensive index. Illustrations in the text are limited to five figures, but the end papers carry semi-pictorial maps of the region with which the book is concerned. The preface outlines the authors' methods of work, and gives the names of their Indian informants and interpreters.

The book begins with a general description of the Pima Indians—their territory, ancient and modern, their subdivisions, and their discovery by white men. They are considered to be of one tribe, with no linguistic divisions, but with a geographic separation into the Pima, or "River People," and the Papago, or "Desert People." The Papago are thought to be more numerous now than they were aboriginally; but the Pima, situated on land that was more desirable to white men, and on the route for the migration and travel of pioneers, have declined culturally during the past century.

The foundation upon which Pima and Papago existence was built is "placed" in the southern part of the Basin and Range physiographic division of the Southwest, and in the Sonoran biotic province. It is a land of low and erratic precipitation, high rates of evaporation, high summer temperatures with wide diurnal ranges, and long growing seasons. Within the area there is considerable variation in climate and vegetation, from the relatively rich river valleys, such as that of the Gila, to deserts and finally to mountains.

Evidence for the manner of living among the pre-Columbian peoples is brought from the fields of archaeology, ethnography, and the history of early exploration by Europeans. Archaeological evidence from the Papago country is slight, and it is suggested that its early inhabitants were migrants from the lower areas. In the larger river valleys there were canal irrigation and large communal houses, apparently built by the Hohokam people, whose culture seems to have disappeared sometime after 1400 A.D. The earliest dated irrigation system goes back to about 800 A.D. Between about 1400 and 1687, when Father Kino first saw the Pima, there is a gap in the known history. The Hohokam culture that is provisionally dated at 1000 A.D. had well-developed irrigation systems, maize cultivation, and wild animal and plant foods similar to those of the modern Pima.

Prehistoric Piman agriculture was extremely hazardous, and it is estimated that crop losses occurred about every fifth year. Nevertheless, the lowland Pima were considerably better off than the Papago, who were always semi-nomadic. The agriculture of the latter was of a meager sort, limited to the rainy season and without benefit of much irrigation. They practiced "floodwater farming," and there is no evidence that they ever stored water for their fields. In seasons not suitable for crops they were reduced to food gathering and hunting. Water for drinking was always a problem, and the authors believe that the movement of the people from place to place was more a search for drinking water than for food.

The authors maintain that such differences between Pima and Papago as the development of irrigation and relatively fixed abodes mark no real cultural differences among the peoples—that they are "one in speech and general culture, the Papago simply being environmentally differentiated Pima . . . who dwelt in a land where running water for irrigation was not available. Desert conditions therefore imposed upon them a different way of life. . . ." Irrigation is reported to have been used among the Papago where running water was available.

It is estimated that the Desert Papago anciently cultivated from ¼ to 2 acres per family, and got about 20 per cent of their food from cultivation. The Pima, on the other hand, used 2 to 5 acres per family, getting 50 to 60 per cent of their food from this source. The Papago are thought to have used about four times as much wild plant food as wild animal food.

Since the coming of the Spaniards, great changes have been caused by the introduction of foreign crops and livestock and, in recent years, by the digging of wells by the government. From the beginning, Pima agriculture was more seriously affected than Papago.

The third chapter closes with an enumeration and brief discussion of the native wild plants and animals used by the ancient people. The importance of these wild foods, particularly the fruits and seeds of the giant sahuaro and other cacti, is shown by the fact that the sahuaro harvest marked the new year, and that each Papago family had a permanent camp in the nearest available cactus area. Among the ancient Pima, mesquite beans were the most prominent wild food, and next in importance were the sahuaro fruit and cholla cactus buds. The only domestic animal was the dog. The chief difference between Pima and Papago in the use of animal foods was that the Pima had fish while the Papago did not.

The ancient agriculture centered around what is called the "maize-bean-pumpkin complex," but many of the crops grown in modern times are European or Mexican introductions. Most important of these introductions were wheat, barley, watermelons, and cow peas. Among the Pima, wheat quickly surpassed maize in importance, but owing to cultural difficulties, the latter remained most important to the Papago until about a century ago. Large acreages have recently gone into alfalfa and cotton, the latter of which was cultivated for both fibre and seed by the ancient peoples.

Among the Gila Pima, the best land was black, and there was little choice of sites. The land cultivated by the Papago was of necessity at the mouths of washes where flood water was available. Clearing was not a problem for the Papago, but the Pima had a great deal of difficulty with brush, owing to their poor tools. The work of clearing and cultivating was done by the men in fields which were considered to belong to the tribe as a whole, but which were worked, not communally, but by families. The center of the economic system was the family, with title held in the male line. Under aboriginal conditions there was no fencing. Cultivation practices were determined by the village headmen.

Agricultural implements consisted mainly of the digging stick and the weeding hoe. Both were invariably made of hard wood, but were never fire-hardened. Crude shovels were probably not used until after the arrival of the Spaniards. The same is true of the rake and of iron blades for the earlier implements. Wooden plows did not appear until comparatively recent times.

The Piman year began in July, with the ripening of the fruits of the sahuaro cactus. This was also the beginning of the rainy season. The year had lunar months, and the whole calendar was closely related to seasonal weather and the appearance of plants and animals. Where water supplies were continuous, two plantings were made, one after the last killing frosts of spring and the other after the sahuaro harvest. The last planting could not be made much later than mid-August. Among the Papago only one planting was possible, at the beginning of the summer rains. The Pima first heavily irrigated the land and allowed it to dry for about a week before putting in the seed. The Papago put the seed into the moist ground immediately after the flood water had left it. Aboriginally all crops were planted in hills, and were never mixed in the same plot.

The Pima had dammed the Gila River for water storage and were practicing canal irrigation when the Spaniards came. They had worked out a system for community ownership and maintenance of the canals. The flooding was done according to need as the season progressed. The Papago built levees for the control of their flood water, and if water was available they used ditch irrigation. Three natural floodings were considered necessary for a good yield. Soil fertility appears not to have been a problem, and areas were rarely abandoned because of soil depletion, although there was no fallowing or crop rotation.

Cultivation was primarily for the control of weeds and was done mostly with the hoe. Crops were never thinned, as seed was ordinarily used sparingly. There was little or no protection against animals or wind. Harvesting was begun when the crop was ready, rather than at a time determined by sun or moon. It was done mainly by the women, with families trading labor or hiring labor on shares. Men did some of the heaviest work. The methods of harvesting and storage are described with considerable detail in Chapter VIII. A wealth of interesting information, arranged by crops, is presented.

Tobacco was a ceremonial crop, traditionally grown only by certain old men who knew the necessary rituals. The authors suggest two reasons for the development of these habits: a man had to be grown before he could use tobacco, and only old men had time to grow it. Among the Papago it was always grown in secret, and among the Pima

there had to be one or more old men to help plant it and talk to it while it was being planted. Piman women were not allowed to see tobacco growing. Smoking was a ceremonial performance and was practically universal among the men. They had no true pipes, but made cigarettes with the stem sections of the pig-weed or of the reed grass. Tobacco was not chewed.

The slightly developed ceremonialism in Piman agriculture is treated in the last chapter of the book. There was a harvest festival and a rain ceremony at the sahuaro harvest to insure the coming of the rainy season, and, among the Papago, there was a green-corn ceremony when the plants were about three feet high. The only planting ritual consisted of songs. In their lack of agricultural ceremony the Pima and Papago contrast sharply with the Pueblo.

The factual bases for the book appear to have been examined critically and objectively, and the whole discussion is admirably documented. It is obvious that the authors have studied the country and its people exhaustively and at first hand. Such a treatise as this is difficult to write, for it is semi-historical in a way which requires the authors to be continually stepping back and forth over the threshold of recorded history. On safe ground in one paragraph, they may find themselves beset in the next by all the hazards attendant upon the interpretation of legend and scanty archaeological data. To have kept a uniformly critical balance through such difficulties, as these authors have done, is an achievement of no mean proportions.

A layman may find in the book some minor sources of confusion that might not be of consequence for anyone versed in Southwestern archaeology and ethnology. Early in the book the authors are at some pains to state that they consider the Pima and Papago as one tribe, divided territorially and environmentally, but with no real cultural differences. Throughout most of the discussion, however, they find it necessary, in describing the life of the people, to keep them in separate categories, for the Pima and Papago have differed sufficiently in habits to make generalization impossible. This would have been all right if the term "Piman" had not been given a double meaning at the very beginning of the book—it is used on one hand as a generic term for both Pima and Papago, and on the other for the "Lower" or "River Pima." Owing to the consistency with which the authors maintain the essential unity of the two peoples, the reader frequently has trouble making out whether they are discussing one group or both.

In addition to being an ethnologic history of a given group of people, the book is an interesting example of a study in regional geography. It attempts to fit together a large number of basic factual patterns—physical and biotic—to form a broad geographic concept of the country inhabited by these Indians. As in most "marginal" areas, human life has always been hard, and plant and wild animal life relatively sparse. Interrelationships among these, and between all of them and the physical world, are far more simple and direct than in more highly evolved communities, so that there is some possibility of viewing the whole as an integrated structure. The authors of *Pima and Papago Indian Agriculture* have made a definite contribution in this field.

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Dating Prehistoric Ruins by Tree-Rings. W. S. STALLINGS, JR. (General Series, Bulletin No. 8, Laboratory of Anthropology, Santa Fe, 1939.)

Here is a lucid but brief statement (20 pages) for the beginner about the science of tree-rings. Essentially the same ground has been covered in other publications, but these

accounts are either presented in such great detail or so couched in technical terminology that the interested reader finds difficulty in sinking his teeth into the problem.

Stallings discusses such subjects as the nature of the annual ring, ring size and moisture, the process of matching ring patterns or cross dating, false rings and missing rings, the mechanics of building a chronology, skeleton plotting, the kinds of wood employed in tree-ring dating, and a brief statement about the areas in which tree-ring dating has become effective. All of these headings, involving the basic considerations and steps, are treated in understandable terms and, wherever feasible, are clarified by photographs and diagrams. The drawing illustrating the principle of chronology building is one of the clearest yet presented on this relatively simple but often misunderstood procedure in dendrochronology.

Stallings also sums up the significant achievements in the history of the Douglass method of reading time from the beginning of the studies in 1901 to the present.

The treatment of the subject matter will not be sufficiently critical or full to satisfy the student of the method. But this objective is clearly not the intent of the bulletin, which makes no attempt to carry the discussion beyond the contact of archaeology.

For those whose interests are more extensive, a bibliography of selected references is included. This bulletin is recommended to those who have enough intellectual curiosity to want to know how tree-ring dating works.

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Medieval American Art. PÁL KELEMEN. (New York: The Macmillan Company, 1943. $22.50. 2 volumes. Pp. xiv+414, 306 plates in second volume.)

El proposito fundamental de Pál Kelemen, en el libro que comentamos, es incorporar el arte de un Continente dentro del Arte Universal.

Es indudable que para los iniciados, para los americanistas y para algunos de los estudiantes del arte del mundo, los objetos producidos por el indio americano, antes del Descubrimiento, eran ya conocidos y apreciados como una forma más y muy alta, de expresión estética, pero para la inmensa mayoría del público, el arte del indio americano no era todavía un capítulo indispensable de toda obra que se ocupe del arte universal.

En efecto, los manuales de la Historia del Arte, o bien omiten ocuparse de las artes de este Continente, o lo hacen en forma tan superficial y generalmente tan incorrecta que en la mayoría de los casos no dan sino una forma incompleta, si no es que errónea.

Kelemen considera que ha llegado el momento de incorporar ya estas manifestaciones artísticas de los indígenas americanos, y la mejor demostración de que forman un conjunto imponente de productos bellos, es hojear simplemente el segundo tomo de su obra en el que el autor, con muy bien acierto, ha colocado todas las ilustraciones, lo que permite tener siempre enfrente el objeto que se comenta, sin tener que interrumpir la lectura del comentario.

Vistas así en su conjunto, las obras de arte producidas por el indio americano, lo mismo las grandes ciudades que ocupan los picos de las montañas, o que se encuentren perdidas en la selva; las estatuas de los dioses o de los héroes; las pinturas murales y los manuscritos; las joyas, los utensilios y las vasijas, constituyen un grandioso monumento artístico del que el hombre moderno no puede prescindir, si quiere estudiar las diferentes expresiones estéticas a las que ha llegado la humanidad.

Un gran arte. No un arte de primitivos. Un arte que cuenta con todos los recursos,

con todas las técnicas que implica una gama casi infinita de expresión, desde la sencillez clásica de la figura olmeca, hasta el arte flamboyant de la estatuaria maya; desde la pura línea y belleza de la vasija arcaica, hasta el realismo casi fotográfico de la vasija chimú.

Todo un mundo de arte, un "neuvo mundo" encontrará el hombre de cultura europea, resumido en sus manifestaciones esenciales en este libro de Kelemen, en donde se contiene el arte de América durante más de viente siglos, en lo que el autor llama la Edad Media Americana.

El primer tomo de su obra, en donde está el texto, sigue un criterio de clasificación de las artes, más que un criterio de culturas. Así por ejemplo abarca los siguientes capítulos: arquitectura, escultura, cerámica, tejidos, metalurgia, jade y otras piedras semipreciosas, frescos y manuscritos; un capitulo para las diferentes artes aplicadas; otro capítulo que titula: "facetas de la vida diaria" en el que estudia la agricultura, los instrumentos agrícolas, pipas, espejos, cuenta y medida, caminos, planificación de las ciudades, baños y estanques, y escaleras.

Por supuesto que en cada uno de estos capitulos considera las diversas zonas en las que puede dividirse América desde el punto de vista artístico, pero el criterio es fundamentalmente sobre determinada manifestación artística, y dentro de ese criterio, sobre las culturas, y no viceversa.

Otros capítulos del libro, como por ejemplo el primero, en el que hace un estudio sobre la posición del arte indígena americano dentro de la Historia del Arte Universal, y el que podríamos titular "prólogo" desde el punto de vista histórico, sirve más bien de base para los capítulos que hemos mencionado. Concluye el libro por último con el capítulo sobre la evolución o la influencia de las diversas culturas, del que nos ocuparemos más adelante, y está provisto de una carta cronológica, bibliografía, indice y sobre todo de una abundante colección de excelentes fotografías y dibujos que forman las 306 láminas del Tomo II.

No creemos exagerar al decir que hasta ahora, el libro de Kelemen es la obra más importante que se ha escrito para tratar en su conjunto el arte del indio americano, antes de que se pusiera en contacto con Europa.

No sólamente desde el punto de vista de su análisis minucioso y hábil, sino tambien desde el punto de vista de la comprensión del arte, es un excelente trabajo, y hay que advertir que tratándose de un arte que para un europeo es exótico, su traducción a las formas de expresion europeas y sobre todo a las formas del sentimiento europeo, es particularmente importante.

El arte es una forma de la cultura: en consecuencia toda manifestación estética alejada de nosotros en el tiempo o en el espacio, —y con mayor razón si lo es en el tiempo y en el espacio—, no es inmediatamente inteligible sino para individuos de sensibilidad excepcional, y por inteligible entiendo aquí la inteligencia intuitiva, que nos hace gustar de la obra de arte sin entender los motivos que la inspiraron, y muchas veces como un simple goce de forma o colorido.

El libro de Kelemen es pues una útil traducción, en ideas europeas, de un arte que está en el polo opuesto de Europa, desde el punto de vista sentimental.

Intentar resumir en breves páginas el arte de todo un Continente, durante por lo menos veinte siglos, parece que es tarea imposible no sólo por la magnitud del campo, sino sobre todo por la falta de estudios monográficos de las diversas provincias artísticas en las que podemos dividirlo; pero precisamente en esto está el mérito principal de la obra de Kelemen, su libro no se presenta como un tratado en el que se dice la última palabra sobre el asunto, sino que, en muchas partes, es puramente sugestivo de la enorme tarea que queda todavía al arqueólogo y estudiante de arte, para llenar las innumerables lagunas, algunas de ellas bien extensas y profundas, que existen en nuestro conocimiento

de las producciones del indio americano. Es verdad que muchos de estos campos han sido explorados, que en diversas regiones tenemos ya, si no una cronología absoluta, es decir, traducible a la cronologia cristiana, por lo menos cronologías relativas sobre las diversas epocas en que ocurre el desarrollo de las fases de una cultura, pero por otra parte tambien es cierto que existen todavía muchas regiones de América en donde la conexión necesaria entre el objeto que estudiamos y la cultura que lo produjo nos falta, y se hace sentir la necesidad de mayores exploraciones, de estudios monográficos más completos en casi todas las regiones de este Nuevo Mundo.

Por otra parte aun en aquellas regiones que han sido estudiadas a fondo; desde el punto de vista arqueológico, todavía no se ha comenzado a hacer el estudio desde el punto de vista propiamente estético, y es indudable que sólo por excepción podrán coincidir el arqueólogo y el historiador del arte, pues tienen distinta preparación cultural, distinto interés, distinto punto de vista.

Por ejemplo en el campo de la arqueología mexicana, aun en aquellas regionas más bien conocidas, como el Valle de México, sólamente algunos libros muy recientes estudian los productos de los indígenas arcaicos, teotihuacanos, toltecas y aztecas, desde el punto de vista estético y todavía es dudoso que podamos aplicar los criterios del estudiante de la Historia del arte a esta provincia que es una de las mejor conocidas.

Por tal motivo, siendo como es el libro de Kelemen, una magnifica realización del propósito del autor, sin embargo su valor esencial será el provocar en el futuro una serie de estudios, de meditaciones, sobre los objetos producidos por el indio americano y sobre el valor artístico de dichos objetos.

En el capítulo que Kelemen intitula: "Evolución o influencia," discute el problema de las posibles relaciones entre el arte del Viejo Continente y el de América. Es importante también que desde este otro punto de vista las conclusiones a las que llega, sean las mismas que alcanza el antropólogo fisico, el arqueólogo, el etnólogo y el linguísta, es decir, la posibilidad de su contacto sólo en tiempos muy remotes, antes de la existencia de las culturas que en América produjeron el gran arte de que se trata en la obra de Kelemen.

Frente al dilema: evolución o influencia, Kelemen se pronuncia decididamente por la evolución. No hay según él, una semejanza en el estilo que autorice para hablar de una influencia cultural y artística, entre las viejas civilizaciones euroasiáticas y las civilizaciones americanas. Podemos decir una vez más, que cuanto menos se conoce de los dos campos, el Viejo y el Nuevo Mundo, tanto mayor es la semejanza que se nota entre ellos. En efecto, cuando se analizan en detalle las producciones de las dos áreas, y cuando se estudian técnicamente los productos de ellas, las semejanzas superficiales se disuelven en una serie de diferencias fundamentales, pero sobre todo, y esto es lo más importante, el espíritu mismo que anima a los dos tipos de producciones, es completamente diferente.

Tenemos que convenir entonces en que las realizaciones artísticas de los indios americanos, brotan de una fuente quizá unica, pero que no es posible localizar en el Viejo Continente.

Exceptuando las formas más rudimentarias de la expresión artística, comunes por decirlo así, a los primeros balbuceos expresivos de la humanidad: líneas, círculos, cuadrados, triángulos, puntos, etc., toda la grandeza del arte americano proviene de sí mismo. El hombre en este Continente tuvo que volver a descubrir todo, no sólo la agricultura, la cerámica, la metalurgia, etc., sino la expresión artística, la forma de exteriorizar de un modo objetivo, las impresiones que la naturaleza y el hombre producían en su espíritu, y como lo dice Kelemen, quizá lo que hace más valioso a este Arte del Continente Americano es su absoluta independencia en relación con las expresiones estéticas de los otros continentes.

Tenemos aquí la oportunidad de estudiar, sin mezcla con otras influencias, cómo se desarrollan las artes, cómo surgen, se perfeccionan y decaen, sin que pueda atribuirse esto a la invención de otros hombres conectados con la cultura euroasiática.

Naturalmente que, como ya dijimos antes, y como el autor lo dice también frecuentemente, esta evolución y este desarrollo no pueden ser estudiados actualmente en su totalidad porque nos faltan investigaciones y porque el campo en su inmensa mayoría es todavia virgen, pero es precisamente esta novedad del estudio lo que le dá mayor valor, y creemos que el libro de Kelemen será particularmente importante para los europeos—cuando al terminar la guerra, pueda ser conocido en Europa.

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TRANSLATION OF PRECEDING REVIEW OF *Mediaeval American Art*

In *Medieval American Art*, Pál Kelemen undertakes as his fundamental task, the incorporation of the art of a continent within the art of the whole world.

It is true that the objects produced by the American Indian before the Discovery have, for some time, been known and appreciated as a very high form of esthetic expression by those who understand them, by Americanists, and by a few students of world art; but for the immense majority of the public the consideration of the art of the American Indian has not yet become recognized as indispensable in any study of universal art.

In effect, manuals of the history of art either completely omit any consideration of the art of this continent, or devote to it consideration in such a superficial and generally incorrect form that, in the majority of cases, they give an incomplete, even actually erroneous impression.

Kelemen feels that the time has already arrived to incorporate these artistic expressions of the American Indians within the body of art. The best demonstration that they form an imposing aggregate of beautiful objects will confront one who simply turns the leaves of the second volume, in which the author has happily placed all the illustrations, a fact which permits one to have the object under discussion always in front of him with no need to interrupt the reading of the text.

Seen thus, as an aggregate, the works of art produced by the American Indian, the great cities perched on mountain peaks or lost in the forests, statues of gods or heroes, murals, manuscripts, jewelry, utensils, and ceramics constitute an imposing artistic monument which modern man cannot overlook if he wishes to study the different esthetic expressions to which humanity has attained.

It is a great art, not an art of primitives. It is an art which makes use of all the resources, of all the techniques implied by an almost infinite gamut of expressions, from the classic simplicity of an Olmec figure to the flamboyant art of Maya statuary, from the pure line and beauty of an archaic vase to the almost photographic realism of a Chimu vase

A person of European culture will find the foremost manifestations of a whole "new world" of art summed up in this book of Kelemen's, a book which encompasses the art of America during more than twenty centuries, the art of what the author calls the American Middle Ages.

The first volume of this work, which is devoted to text, is based on a classification of arts rather than of cultures. It includes the following chapters: architecture; sculpture;

ceramics; weaving; metal working; jade and other semi-precious stones; murals and manuscripts; a chapter for miscellaneous applied arts; another chapter, entitled "Facets of Daily Life," which considers agriculture, musical instruments, pipes, mirrors, counting and measuring, roads, city planning, baths and reservoirs, and stairways. Of course, in each of these chapters the author considers the different zones into which America may be divided from the point of view of art, but the fundamental topic of discussion is the selected artistic manifestation, and only under this heading are cultures considered, not vice versa.

Other chapters of the book, as, for example, the first, in which the author makes a study of the position of native American art in art history and which we may call an historical prologue, serve as an excellent foundation for the chapters which we have already mentioned. The book concludes with the chapter, which we shall consider later, on evolution or influence. It is provided with a chronological chart, bibliography, index, and, above all, with an abundant collection of excellent photographs and drawings which occupy the 306 pages of the second volume.

We do not believe that it is an exaggeration to say that Kelemen's book is the most important yet written treating as a whole the art of the American Indian before European contact.

It is an excellent work, not only from the point of view of its thorough and skillful analysis, but also from the point of view of its understanding of the art. It should be noted that in treating an art which, for Europeans, is exotic, its translation into European forms of expression and of feeling is particularly important.

Art is a form of culture. In consequence, each of our allied esthetic manifestations in time or space, and more particularly in time and space, is only immediately understood by people with exceptional sensibility. And by "understood" I mean here the intuitive understanding which causes one to appreciate a work of art without understanding the motives which inspired it; such an appreciation is frequently manifested as pure enjoyment of form or color. Kelemen's book is thus a useful translation into European ideas of an art which, from the emotional point of view, is at the opposite pole from the European.

To attempt to sum up in a few pages the art of a whole continent during at least twenty centuries appears impossible, not only because of the immensity of the field, but above all because of the lack of monographs on the various artistic provinces into which it may be divided. Yet it is precisely in this that the principal merit of Kelemen's work lies. His book is not presented as a treatise pronouncing the last word on the matter in hand; many sections are purely suggestive of the enormous task which still remains for the archaeologist and student of art before they can fill in the innumerable lacunae, some of them very extensive and deep, existing in our understanding of the works of the American Indian. It is true that many of these fields have been explored, that in diverse regions, we have, if not an absolute chronology which can be expressed in terms of Christian chronology, at least a relative chronology for the different periods in which the evolution of the phases of a culture occur. On the other hand, it is equally certain that there still exist many parts of America in which there is no connection between the object which we study and the culture which produced it, a condition which brings home the need for more exploration, for more complete studies in almost all the regions of this New World.

At the same time, even in those regions which have received searching study from the point of view of archaeology, research from the point of view of pure esthetics has not yet been undertaken. Unquestionably, only in exceptional cases will the fields of the archaeologist and the art historian coincide, since each has a distinct cultural prepara-

tion, distinct interests, and distinct points of view. For example, in the field of Mexican archaeology, even in the best known regions such as the Valley of Mexico, only a few of the most recent books study the work of the Indians of the archaic period, of the people of Teotihuacan, of the Toltecs, and of the Aztecs from the esthetic point of view; and it is doubtful if we can yet apply the standards of the art historian to this province, which is among the best known. For this reason, although Kelemen's book is a magnificent fulfillment of his aim, its primary value will be in provoking a future series of studies and thoughtful considerations of the objects produced by the American Indian and of the artistic worth of these objects.

In the chapter which Kelemen entitles "Evolution or Influence" he discusses the problem of the possible relations between the art of the Old World and that of America. It is noteworthy that the conclusions which the author reaches from this point of view are the same as those reached by the physical anthropologist, the archaeologist, the ethnologist, and the linguist; that is to say, he sees the possibilities of contact only in very remote times, before the existence of the cultures which produced in America the great art which his book treats. Faced with the dilemma, evolution or influence, Kelemen comes out flat-footedly for evolution. According to him, there is no resemblance in art style which permits one to speak of a cultural and artistic influence between the old Eurasiatic civilizations and the American civilizations. We may say once again that the less one knows of the two fields, the Old World and the New World, the more similarity one notes between them. Actually, when these works are studied from the point of view of technique, the superficial similarities dissolve into a series of fundamental differences, but above all, and this is the most important, the very spirit which gives rise to the two is completely different. And so we must agree that the artistic expressions of the American Indians sprang from a source which is perhaps unique, but which cannot possibly be localized in the Old World. Excepting only the most rudimentary forms common to man's first inarticulate attempts at expressing himself—lines, circles, squares, triangles, dots, and so forth—all the grandeur of American art arises from itself. Man on this continent had to discover everything, not only agriculture, pottery, metal working and so forth, but also an artistic expression, the form in which to make objectively manifest the impressions which nature and man produced on his spirit. As Keleman says, perhaps that which makes the art of this continent so very rich is its absolute independence of the esthetic arts of the other continents.

Here we have the opportunity of studying the gradual development of the arts without a mixture of outside influences: how they arise, become perfected, and decay, with no possibility of attributing this history to the influence of other men with Eurasiatic cultural connections.

We have already alluded to the fact, frequently expressed by the author, that this evolution and development cannot actually be studied as a whole, because we lack data and because by far the greater part of the field is still virgin. It is precisely the novelty of the study which contributes so highly to its value, and we believe that Kelemen's book will be particularly important for Europeans. When the war is over it should be known in Europe.

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INFORMATION FOR AUTHORS

AMERICAN ANTIQUITY is concerned primarily with archaeological matter, but articles dealing with related fields may be accepted providing that their connection with the archaeological field is clear. Manuscripts must be typewritten on standard 8½×11 paper, on one side only, double spaced. Articles should not exceed a length of 7500 words without subsidy by the author.

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